ADVNCED WASTE WATER TREATMENT SLURRY DEWATERING FACILITY STANDARD STARTUP REVIEW FINAL REPORT

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REPORT

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY

STANDARD STARTUP REVIEW FINAL REPORT

September 4, 1996

APPROVED: _____
WILLIAM H. PREVITY

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There were a number of significant strengths as well as problems observed during the conduct of the SSR. The following comments are provided:

Based on observations and interviews, there was a high degree of confidence expressed by the team of supervisors, operators, and support personnel to safely operate the SDF systems. One shortcoming expressed by the operators was the limited opportunity for hands-on training during the startup testing program and operations training.

Operations personnel reported very effective support by supervisors to promptly address safety issues. A review of the lock and tag program indicated no deficiencies. Lock and tag had been cited as a problem area in early assessments of the AWWT Facility.

The design build process raised a number of questions relating to documentation of design changes and to the control of changes to Integrated Construction Acceptance Testing criteria, bothl of which may require some review to the specifications to be used in future subcontracts.

The number of deficiencies relating to interface with waste programs indicates an opportunity for better coordination and completion of requirements to improve project waste management efficiency.

1.0 Purpose

The purpose of the Standard Startup Review was to verify the readiness of the Advanced Wastewater Treatment, Slurry Dewatering Facility to operate with respect to safety, health, environmental compliance, and management in accordance with the FEMP QA-0013, *Standard Startup Review (SSR)*.

2.0 Background

The SDF will provide dedicated conditioning and dewatering of AWWT generated waste slurry up to 25,000 gallons per day and also to accommodate conditioning and dewatering of a limited quantity of miscellaneous waste slurry or sludge that may be transported to the SDF from other site activities. The purpose of the SDF is to reduce the volume of the slurry by removing water from the slurry using a sludge thickener tank and filter press. The SDF is intended to replace the dewatering capability that has existed at Plant 8.

3.0 Scope and Objectives

The scope of the SSR consists of verifying that the following objectives and sub objectives were addressed:

HS. Hardware and system readiness to commence operations has been achieved. (HS)

PO. Personnel and organization readiness to commence operations has been achieved. (PO)

MP. Management programs have achieved a condition of readiness to support commencement of operations. (MP)

PP. Procedures and processes are in place that adequately support operations. (PP)

SO. Support organizations are staffed, trained, and have programs which adequately support operations. (SO)

The verification of readiness to operate is accomplished by ensuring that OBJECTIVES and SUB-OBJECTIVES developed from the FEMP QA-0013, *Standard Startup Review (SSR)* are addressed.

The physical scope of the SSR was limited to the SDF building, systems, equipment and procedures including the interface with the existing AWWT systems and facility.

The SSR conducted on the SDF closely paralleled a Readiness Assessment and thereby examined the process which will be used for an SSR assessment of the most complex type of activity. Therefore, the scope of this SSR was purposely very conservative and should not be necessarily considered the model for the scope of future SSRs.

4.0 Process

The SSR was conducted in accordance with the *Standard Startup Review Implementation Plan - Advanced Wastewater Treatment Slurry Dewatering Facility.* The plan, included this report as Attachment D, was developed and approved in accordance with FEMP RM-0025, *Pre-Operational Assessment Program*. The SSR OBJECTIVES were developed from the assessment objectives listed in requirements provided in RM-0025. Criteria Review and Approaches (CRA's) were developed from the OBJECTIVES and SUB-OBJECTIVES to establish the review criteria and methodology that define the depth of the SSR. Each criteria had a corresponding review approach. The CRA's, developed by SSR Team Members, utilized the members' expertise; the requirements specified in the Aquifer Restoration Project, *Startup Plan for the Advanced Wastewater Treatment Slurry Dewatering Facility*; the potential hazards of SDF operations; and the findings of internal and external review groups. The SSR conducted from July 16-19 included reviewing procedures and programs; auditing records; interviewing personnel; inspecting equipment and facilities; and observing an operational demonstration and training.

The review was limited to those activities and programs used to ensure environmental, safety, and health protection for the SDF Project. Some credit was taken for the results of recent audits, appraisals, and assessments including the Readiness Assessment of the AWWT where the scope and results of that particular review was considered adequate to ensure that the program could support operational readiness of the SDF.

The SSR was a performance-based review with the emphasis placed on performance adequacy rather than a systematic review of program structure and organization. If review indicated a weak program then further analysis of the program was conducted. An SSR Appraisal Form was completed to document the review actions taken to satisfy CRA's. An SSR Deficiency Form was completed for each observation/finding identified during the review.

The Team Leader and Team Members made the determination of whether a deficiency was an observation, post-start finding, or pre-start finding using the criteria provided in the SSR Implementation Plan. The SDF Program Manager resolved pre-start findings and documented the resolution on an SSR Finding Resolution Form. Post start findings will be entered into the site deficiency tracking system.

During the SSR, daily debriefings were held for Project Management. The results of that day's assessments as well as potential findings and observations were discussed. Good communications existed between the SSR Team and Project Management throughout the conduct of the SSR so that the assessment issues were easily resolved and amplifying information was provided to assist in project's development of corrective action for findings.

5.0 Team Composition

The SSR Team consisted of the following personnel. General areas of interest are annotated.

William Previty - Team Leader
Surinder Kumar - Engineering
Tracy Parmer - Conduct of Operations and Training
Marlon Richardson - Safety and Health
Jeffrey Rowe - Quality Assurance and Environmental Compliance

6.0 Evaluation

There were nine Pre-Start Findings, seven Post Start Findings and six observations issued by the SSR Team. In addition, the project identified five pre-start findings prior to commencement of the SSR. The project provided a plan of corrective action for all pre-start findings and the resolution of each was certified completed by the Program Manager. The responses to all pre-start findings were evaluated as acceptable and corrective action was verified completed by the SSR Team Leader.

The results of the SSR are documented on the Appraisals included as Attachment A. Findings and deficiencies were recorded and are included in Attachment B. Observations which would lead to excellence in operations are also included in Attachment B. In some cases, administrative reporting of appraisals was streamlined by combining related or duplicative CRA information on a single appraisal form. The following is a summary of evaluation in the principal functional areas:

Conduct of Operations - Conduct of Operations was adequately implemented in the SDF. Operations Management, Supervisors and Operators were confident in their ability to safely operate the SDF systems and components, and they demonstrated good knowledge and practice of conduct of operations principles. Since operations personnel were experienced as a result of conducting operations in the AWWT Facility, the addition of the SDF functions to those in the AWWT provided essentially no new CONOPS requirements to their shift routine. One area not adequately addressed in CONOPS was the significant number of utility systems valves not being labeled in the SDF. While process related valves were all labeled, some utility systems valves described as "field run" were not labeled. A review of the lock and tag program indicated no deficiencies. Compliance with lock and tag requirements had been an area of concern noted on previous assessments in the AWWT.

Training - The training and qualification program plan was adequate; however, an insufficient number of trained operators were qualified at the commencement of the SSR to conduct shift tours in all sections assigned to the project. This problem was corrected during the SSR. Some training required for supervisors and technical support personnel was incomplete and while this is not a significant deficiency, it is a recurring problem.

Operators expressed a training shortcoming in the limited opportunity for hands-on training during the testing phase and the operational demonstration. No drills were scheduled. The drill program which is an element of the AWWT continuing training program needs emphasis.

Safety and Health - Worker safety was adequately incorporated in the project. Interviews with operations personnel indicated a high degree of safety awareness and pointed to very effective performance by supervisors to promptly address safety issues. A few deficiencies were noted and were easily correctable. There was an administrative concern that the Auditable Safety Analysis conclusions regarding HEPA ventilation requirements was not fully supported by the Preliminary Hazard Analysis. This was corrected during the SSR.

Engineering - The design build process raised a number of questions relating to documentation of design changes and to the control of changes to Integrated Construction Acceptance Testing criteria. Several deficiencies were noted including a twisted tank leg which had to be evaluated for acceptability. The SSR Team did not address how this tank, a major component, could have been received and installed without this twisted leg being previously identified as a deficiency. The concern associated with this design build should be examined to determine if specifications on future contracts would require further definition.

Quality Assurance and Environmental Compliance - Several deficiencies in the Quality Assurance area were noted. Some could have been avoided if required actions had been completed prior to commencement of the SSR. The number of deficiencies relating to interface with waste programs indicates an opportunity for better coordination and completion of requirements to improve project waste management efficiency.

7.0 Recommendations

The SSR Team Leader with full concurrence of the SSR Team members, determined that a satisfactory state of readiness exists in order to safely proceed with operation of the SDF. This concurrence is provided following the verification that all pre-start findings were satisfactorily resolved, certified by the Project Manager, and verified by the SSR Team Leader.

The Project Manager and the entire project team are complimented on their hard work, cooperation, and assistance provided throughout the assessment process.

The following recommendations are provided for consideration in improving the new SSR procedure and process:

SSR Process. The Standard Startup Reviews (SSR) Site Procedure QA-13 was recently developed to meet the requirements of RM-0025, Pre-Operational Assessment (PA) Program. While the procedure outlined in QA-13 provides an adequate process to perform

a pre-operational assessment, the present guidance on the development of criteria to be assessed while performing a team based SSR can be administratively more demanding than if the team were conducting an Operational Readiness Review(ORR) or a Readiness Assessment (RA). This was the case in the SDF SSR with respect to development of criteria. While FERMCO ORRs must examine seventeen core requirements and the RA may use a graded approach to these core requirements, the SSR must be developed from a larger set of objectives/requirements all of which may be applicable to a project. The net result is that a significantly greater number of criteria and review approaches (CRA's) could be applicable to an SSR than if the same project was assessed using the ORR or RA process. It is strongly recommended that the SSR process for development of a project SSR Plan and the SSR Implementation Plan be made more consistent with the ORR and RA process with respect to developing CRA's. There should not be more core requirements applicable to SSRs than ORRs or RAs.

SSR Plans. There is great latitude as to whether a project SSR Plan be developed in a manner such that a checklist or a detailed plan can be used to assess a project. Based on the previous lesson learned which addresses the SSR process, projects could elect to use a checklist which avoids substantial administrative effort to develop criteria and review approaches and avoids the additional requirement to develop a final report. While there are projects that should be examined using checklists, there needs to be better guidance on the use of checklists or detailed plans such that we ensure projects are adequately assessed for readiness to startup no matter what method is used.

Requirement to Respond to Findings in a Timely Manner - There is no set guidance in the SSR procedure which drives the project to respond to the findings within a specific time frame. The procedure should provide some specific guidance such as 15, 30 or 45 days.

8.0 Lessons Learned

The following lessons learned are submitted:

Coordination. The availability of supervisors and operators for discussion and interviews was limited because of the requirement for these same personnel to be operating the AWWT Facility during the conduct of the SSR. This was not a project as with most previous projects where everyone was available and waiting just to support the conduct of the SSR. The SSR Team failed to recognize this potential conflict and did not address the issue with project management until it became a problem on the first day of the SSR. Project management was extremely cooperative and took measures to assist the team in resolving this issue. It is one of those areas in which better planning could have facilitated the conduct of the SSR.

Readiness to Operate. The SSR commenced following receipt of the "ready to operate" memorandum from the Project Manager. A few deficiencies were noted, particularly in training and quality assurance, which could have been avoided had the project manager been provided a more accurate status of readiness from his respective managers and staff.

Most of these deficiencies were easily corrected during the conduct of the SSR, however these areas were not fully ready to operate at the start of the SSR.

ATTACHMENTS

ATTACHMENT A	-	SSR Appraisals
ATTACHMENT B	-	Findings and Observations
ATTACHMENT C	-	Standard Startup Review Plan - Advanced Wastewater Treatment Slurry Dewatering Facility
ATTACHMENT D	-	Standard Startup Review Implementation Plan - Advanced Wastewater Treatment Slurry Dewatering Facility

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.1.1	REVIEW DATE: 7/17/96

Criteria: The SA/ASA and associated safety documentation have been reviewed and approved by appropriate organizations.

Documents Reviewed:
AWWT/SDF SA/Auditable Safety Analysis (ASA), 94-0038, Rev.2
Operations Procedures for SDF
Radiation Work Permits

Personnel Interviewed:
Manager, Safety System Section, Safety Analysis Department (Meeting)
Aquifer Restoration Project, Operations Manager

Activities Observed:
None

Appraisal Results:
The Auditable Safety Analysis was reviewed during administrative preparations for conducting the SSR. Several issues were raised in which the SSR Team Leader requested additional information or clarification to aid in preparation. The ARP Operations manager convened a meeting with the Manager, Safety Systems Section to discuss these issues. Revision 2 to the SA/ASA provided the additional information requested.

All associated signatures were present and correct.

Team Member: M. Richardson/W. Previty	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.1.2	**REVIEW DATE:** 7/17/96

Criteria: Hazards are characterized and preventive/mitigating measures are identified for the SDF. These measures and other commitments defined in the SA/ASA for protection of worker, public, and the environment are implemented and effective.

Documents Reviewed:

Standing Orders M-123
Operations Procedures 43-C-356 through 43-C-361
RWP 96-05-G13-357 & 356 and 96-05-G13-417
AWWT SDF SA/Auditable Safety Assessment 94-0038, Rev.2

Personnel Interviewed:

Occupational Safety and Health Rep.

Activities Observed:

None

Appraisal Results:

Satisfactory Results.

Team Member: M. Richardson	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.2.1	REVIEW DATE: 7/17/96

Criteria: The health and safety controls are written, reviewed, ~~ad~~ and approved in accordance with FERMCO requirements.

Documents Reviewed:

Standing Orders M-123
Operations Procedures 43-C-356 through 43-C-361
RWP 96-05-G13-357 & 356 and 96-05-G13-417
AWWT/SDF SA/Auditable Safety Assessment 94-0038, Rev.2

Personnel Interviewed:

Occupational Safety and Health Rep.

Activities Observed:

None

Appraisal Results:

Satisfactory Results

Team Member: M. Richardson	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.2.2	REVIEW DATE: 7/17/96

Criteria: Hazards have been identified and mitigators/controls have been specified.

Documents Reviewed:

Standing Orders M-123
Operating Procedures 43-C-356 through 43-C-3651
RWP 96-05-G13-357 & 356 and 96-05-G13-417

Personnel Interviewed:

SDF Occupational Safety and Health Rep.

Activities Observed:

SDF Facility Operations Demonstration

Appraisal Results:

A noise evaluation must be performed in accordance with SPR 12-14. The project reported that preliminary noise readings had been taken, but a formal survey will ~~not~~ NOT BE be completed until all equipment is running during actual SDF Processing Operations. (Deficiency HS.2.2-1) 7/17/96

Team Member: M. Richardson	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.3.1 - HS.3.9	**REVIEW DATE:** 7/17/96

Criteria:

Programs to control the design and modification of facilities and utility systems are in place.

Documents Reviewed:

Functional Requirements and Design Basis Document
Performance Specifications and CFC Drawings
AWWT SDF Safety Assessment/Auditable Safety Analysis 94-0038 Rev. 2

Personnel Interviewed:

Project Engineer

Activities Observed:

Walkdown of Slurry Dewatering Facility

Appraisal Results:

Numerous changes were made to the Certified For Construction (CFC) Drawings without proper documentation. ED-12-5002, Rev. 1, Engineering Design Change Processes establishes the design change process to approved design documents. (Deficiency HS.3-1)

General Comments

The Slurry Dewatering Facility is an add-on facility to the Advanced Waste Water Treatment (AWWT) Facility. Functional Requirements, Design Basis Document and the Performance Specifications were written by Parsons, who was supposed to perform Title III activities. However, the concept of design/build was utilized and Chester Environmental and Staver Construction were contracted to design/build the project.

Chester Environmental wrote their own specifications to supplement the specifications written by Parsons. Because of the nature of the project, the sub-contractor made changes as deemed necessary with the concurrence of Project Engineering. Although the project went through 50% and 90% design reviews, it appears that the review was not adequate. For example, there is inadequate head-room on the second level, major beams and bracings went through the stairways, tanks and other equipment do not appear to be properly installed, piping is supported off the safety hand-rails, hand-rails and bracing were cut to clear interference without authorized documentation, pumps and anchor bolts were shimmed without authorized documentation, and tripping hazards exist in the upper level. (See HS.6.3)

Team Member: Surinder Kumar Skumar	**Team Leader:** William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.3.1	REVIEW DATE: 7/17/96

Criteria: Programs to control the design and modification of facilities and utility systems are in place.
- Facility design conforms with applicable codes (e.g., fire, electrical, toxic chemical, etc.).

Documents Reviewed:

Functional Requirements
Design Bases Document and Performance Specifications
ED-12-5002, Rev. 1, Engineering Design Change Processes

Personnel Interviewed:

Project Engineer

Activities Observed:

None

Appraisal Results:

Documents showed evidence of appropriate codes and standards for the respective designs. The DCN process ensures proper use of the procedures for controlling the design and modification of the facilities.

No deficiencies or observations are necessary.

Team Member: S. Kumar	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.3.2	REVIEW DATE: 7/17/96

Criteria: Design reviews are complete and documented. Non-conformances have been identified and schedules for gaining compliance have been formally approved.

Documents Reviewed:

Functional Requirements
Design Basis Document and Performance Specifications
DCN 012

Personnel Interviewed:

Project Engineer

Activities Observed:

None

Appraisal Results:

The project had 50% and 90% design reviews by all the parties concerned before CFC documents were issued. The continuing involvement of a project team consisting of diverse support group personnel will continue to provide quality reviews of ongoing changes. Project team is aware of open nonconformances and are adequately evaluating them for prestart impacts.

No deficiencies were found.

Team Member: S. Kumar	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.3.4	REVIEW DATE: 7/17/96

Criteria: Latest drawings have been approved and distributed.

Documents Reviewed:

Certified for Construction (CFC) drawings

Personnel Interviewed:

Project Engineer

Activities Observed:

None

Appraisal Results:

Revision 0 of the drawings corresponds to the CFC drawings. However, there does not seem to be any approval process for the CFC drawings either by FERMCO or DOE. The red-line (as-built) drawings are now being revised in house by FERMCO drafting to incorporate all the design change notices (DCN's).

No deficiencies were found.

Team Member: S. Kumar	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.3.5	REVIEW DATE: 7/17/96

Criteria: Equipment configuration agrees with as-built drawing, or exceptions noted on latest drawings.

Documents Reviewed:

Certified for Construction (CFC) and redline (as-built) drawings
ED-12-6002, Rev. 0, Engineering Processing of As-Built Drawings

Personnel Interviewed:

Project Engineer

Activities Observed:

None

Appraisal Results:

Conducted walkdown of drawings comparing them to current plant configurations. The drawings reflected the current conditions and are in the process of being revised based on the incorporation of Design Change Notices (DCN's).

There were only a few instances where the equipment alignment did not match the drawings or that were not exhibited in the drawings. The identified variations from as-built conditions were presented to the project engineer. The identified issues were checked and are in the process of being placed in the system to be incorporated into a DCN.

The drawings appear to be in good condition and adequately reflect the as-built conditions. There are no deficiencies that would prevent the start of Slurry Dewatering Facility.

Team Member: S. Kumar	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.3.6	**REVIEW DATE:** 7/17/96

Criteria: Appropriate review and acceptance of plant modifications made after CFC are complete.

Documents Reviewed:

ED-12-9004, Rev. 1, Engineering Project Close-out
Design Change Notices (DCN's)
Punchlist Inspection Reports
CFC and red-line drawings

Personnel Interviewed:

Project Engineer

Activities Observed:

Appropriate signatures are received before acceptance of equipment or system changes and plant modifications.

Appraisal Results:

The project team and CDC has demonstrated a duty to following control procedures. Work done has included appropriate DCNs. Project personnel have conducted walkdowns following changes. Quality Assurance Department has contributed appropriate levels of review prior to acceptance of any modification to assure requirements/specification compliance.

However, because of the nature of the job (design/build contract) the contractor took upon himself to make numerous changes inadvertently to the CFC drawings without any paper work (DCN's, etc.), a practice not being followed now as the project has been turned over to FERMCO.

Team Member: S. Kumar	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.3.7	REVIEW DATE: 7/16/96

Criteria: Uncontrolled drawings, manuals, and procedures are not used to perform work.

Documents Reviewed:

Procedure Book Station UT-1011 - Procedures 46-C-356, 46-C-357, 46-C-358, 46-C-359, 46-C-360, 46-C-361, 46-C-502

Procedure Record Book Station UT-1010, Procedures Index and Procedures D10-00-020 and PT-0009

Personnel Interviewed:

Process Engineer

Activities Observed:

Not Applicable

Appraisal Results:

The SDF procedure book contained current procedures and was available for operators use.

Five of seven procedures in the SDF controlled copy procedure book were the same as provided to the SDF SSR team for review. One procedure (46-C-360) was found to be a newer revision in the record book station than the one provided to the SSR team. Upon further review, one document control holder had Revision 0 and Revision 1 of 46-C-360 with unsigned controlled copy receipt acknowledge sheets still attached. This is not in accordance with M-140, "RSO Division Document System" which is identified in M-123, Chapter 16 as an applicable document to the SDF.

The AWWT record book station (UT-1010) contains the current revision of 43-C-360 as well as the current copies of the other SDF procedures. While reviewing this record book station, a controlled copy o D10-00-020, "RSO Division Document System." This document has been canceled and superseded by M-140 and M-141. A cancellation notice has been distributed (4/26/96) but UT-1010 has not been updated. The RSO Division Document System requires holders of controlled copies to sign and return receipt acknowledgment cover sheets. However, the document system does not establish response times nor does it provide tracking to ensure the document was received. This results in RSO personnel having out of date procedures and record book stations that are not current. This is the second place in the SDF review that this issue was observed. This issue has been observed in other readiness reviews and audits.

See Deficiency Form No: HS.3.7-1

Team Member: J. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.4.1	REVIEW DATE: 7/17/96

Criteria: Preventive maintenance programs and surveillance requirements are established for process systems and components that are required for safe operations.

Documents Reviewed:

Quality Assurance Assessment Schedule (DRAFT)
Maintenance AWWT Preventive Maintenance Work Orders

Personnel Interviewed:

AWWT Maintenance Supervisor
Quality Assurance Inspector

Activities Observed: N.A.

Appraisal Results:

The AWWT Maintenance Supervisor provided copies of Preventive Maintenance Work Orders for AWWT. These work orders are issued from the maintenance office in Building 12, about one month prior to the PM due date. The AWWT Maintenance Supervisor relies on this system for determining the PM schedule.

The Quality Assurance Inspector has developed a surveillance schedule which includes calibration but not PM items. This surveillance schedule is draft and does not include the next scheduled activity. The RSO division does perform PM self assessments by facility but no schedule for the AWWT or SDF was observed. A PM status report for Building 31 was provided as evidence of current PM self assessment activities.

Team Member: J. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.4.2	REVIEW DATE: 7/17/96

Criteria: Maintenance activities have all documentation and equipment necessary to maintain all new equipment, systems, process changes or new installations.

Documents Reviewed:
N.A.

Personnel Interviewed:
AWWT Process Engineer

Activities Observed:
N.A.

Appraisal Results:
-The equipment manufacturer specifications were reviewed for unique materials and supplies required for operating the SDF. Purchase requisitions have been written for supplies in quantities determined to be required for operation.

Team Member: J. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.5.1 - HS.5.3	**REVIEW DATE:** 7/17/96

Criteria:

A program is defined and implemented to verify the adequate plans for operations testing in the SDF. Start-up tests establish the required conditions and compare performance against approved engineering design acceptance criteria. Required testing is complete with all test deficiencies evaluated and dispositioned.

Documents Reviewed:

AWWT SDF Startup Plan
AWWT SDF Safety Assessment/Auditable Safety Analysis 94-0038 Rev. 2
AWWT SDF ICAT/SOT Results

Personnel Interviewed:

Project Engineer
Project ICAT/SOT Coordinator

Activities Observed:

None.

Results:

Reviewed the project startup plan and associated documents to verify the adequacy of the test program to ensure the acceptability of systems and component to support operations. Test procedures were considered adequate with the exception of Integrated Construction Acceptance Testing (ICAT) for the auger. The results of testing were satisfactory to verify the operability of equipment.

The ICAT development and review for the auger was insufficient in that it did not test the auger to travel its necessary vertical range as required for its intended use. (See Observation - Deficiency HS.5.1-1)

Several changes were made to ICAT testing documentation. The changes were initialed by representatives from the sub-contractor and the project indicating a review and concurrence was obtained. While these changes were considered necessary and the results of testing not in question, there was no formal process identified for the design-build contractor to initiate changes to the ICAT. A process similar to that of a Temporary Change Notice should be specified in the future contracts to maintain formality of the change process and acceptability of results. (See Observation - Deficiency HS.5.2-1)

Team Member: William Previty	**Team Leader:** William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.5.3	**REVIEW DATE:** 7/17/96

Criteria: Required testing is complete with all test deficiencies evaluated and dispositioned.

Documents Reviewed:
QA ICAT/SOT Test Procedure Records

Personnel Interviewed:
QA Inspector

Activities Observed:
N.A.

Appraisal Results:
Refer to CRA SO.1.5.3 appraisal results.

Team Member: J. Rowe	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.5.4	**REVIEW DATE:** 7/17/96

Criteria: SDF operating procedures are verified to the extent possible during Integrated Construction Acceptance Testing/System Operability Testing (ICAT/SOT).

Documents Reviewed:
ICAT/SOT

Personnel Interviewed:
Startup Engineer
Process Engineer

Activities Observed:
System Operability Test of Filter Press and associated tanks and transfer lines using non-radioactive slurry.

Appraisal Results:
During the SOT Technical Procedures 43-C-358 (Thickening, Filtration, and Discharge at the SDF) and 43-C-356 (Receiving Slurries & Chemicals at the SDF) were adequately verified by the startup and process engineers.

Team Member: T. Parmer	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.5.5	**REVIEW DATE:** 7/17/96

Criteria: Operator training is conducted to the extent possible during ICAT/SOT.

Documents Reviewed:
ICAT/SOT

Personnel Interviewed:
Startup Engineer
Process Engineer

Activities Observed:
SOT

Appraisal Results:
No operator training was conducted during the SOT. (Deficiency HS.5.5-1).

Team Member: T. Parmer	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.6.1	**REVIEW DATE:** 7/17/96

Criteria: Process systems and components that are required for safe operations are fully tested with applicable surveillance requirements satisfied.

Documents Reviewed:
Quality Assurance ICAT/SOT Test Procedure Record

Personnel Interviewed:
Quality Assurance Inspector

Activities Observed:
N.A.

Appraisal Results:
The QA documentation for ICAT testing indicates that eight items have not been verified as complete by the QA Inspectors. All other ICAT/SOT items have been documented/verified or identified as deleted. The QA Inspector has identified if the test was witnessed or verified by review of test results.

Four of the eight items are considered required for safe operations (overhead door operation, waste box lid lifting magnets, in line pH indicators,and the caustic day tank system and have not been verified.

See Deficiency Form No: HS. 6.1-1 and HS. 6.1-2

Several items in the QA documentation were incomplete. Some of these items were preceded by a hand written entry "DCN" which documented a change in the ICAT/SOT procedure. A recommendation would be to include a copy of the DCN or also provide the DCN number for traceability of these entries to the original document change form.

Team Member: J. Rowe	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.6.2	REVIEW DATE: 7/17/96

Criteria: Instrument calibrations are within current calibration periods and documented as required by applicable procedures.

Documents Reviewed:

The calibration sticker on the portable scale (SN 9511-86-A) was verified as current. Procedure 43-C-361 instructs operators to use check weights daily to verify scale calibration. Current calibration stickers for items 51-0B033-AIT (2/16/96); 51-0B021A (4/19/96), and 51-0B028-LIT (none). CMMS Equipment List for SDF

Personnel Interviewed:

AWWT Process Engineer
AWWT Maintenance Supervisor

Activities Observed: N.A.

Appraisal Results:

The 10,000 pound portable scale, Associated Scale Model 708, is adequate for the intended purpose. While the scale calibration is current, the check weight required by procedure 43-C-361 was not found in the SDF. Procedure 43-C-361 does not require documenting scale response checks, nor does it specify daily/prior to use. Further interviews determined that the daily scale check would not be documented.

SDF personnel indicated that they do not have a check weight and would delete the requirement from the procedure. If this scale weight is to be used to determine the final weight of the waste, then checking the scale calibration prior to use is required. The weight of the waste is used to calculate the uranium content in the container.

The equipment checked during the SSR either had calibration stickers that matched the CMMS or had no calibration stickers which was consistent with the QA ICAT test records showing the item was not calibrated.

Team Member: J. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.6.3	**REVIEW DATE:** 7/18/96

Criteria:

Structures, systems, and components (SSC's) are in satisfactory physical condition to support safe operations.

Documents Reviewed:

CFC drawings

Personnel Interviewed:

Project Engineer
Process Engineer

Activities Observed:

Walkdown of Slurry Dewatering Facility
SDF operations demonstration

Appraisal Results:

1. Miscellaneous Slurry Tank 704 has one of the supporting legs (north leg) along with its base plate, twisted at an angle (rather than being at right angles to the shell). The as-built drawings do not reflect the actual orientation of the vertical leg. (Deficiency HS.6.3-1)

2. An elevated horizontal run of process piping between the AWWT Bldg. 51 and the Slurry Dewatering Facility is resting on the pipe supports with no clamps or U-bolts. The pipe supports on this run are almost full to capacity. (Deficiency HS.6.3-2)

3. The elevated platform in the vicinity of Tank 705 does not have a safety chain installed at the top of the access ladder in accordance with CFR 1910.23. (Deficiency HS.6.3-3)

4. The air make-up unit is not anchored to its concrete base.

5. Detail "1" (Sheet S-3) shows base plates for the main columns, supported by 2 3/4" diameter Hilti-bolts. These bolts do not appear to be adequate for the application.

6. One of the Hilti-bolts for the column supports has a number of shims. There is no documentation authorizing the use of shims.

(continued)

Team Member: Surinder Kumar	**Team Leader:** William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.6.3 (continued)	**REVIEW DATE:** 7/18/96

7. Miscellaneous Slurry Tank Pumps (item 604) are shimmed on the east side of the installation. There is no documentation authorizing the use of shims.

8. Floor grating for the pipes is cut but not banded.

9. Hand rails have been used as a structural member. There is no documentation authorizing this practice.

10. Single angle bracing L2X2X4 at the upper floor level (Sheet S-4) has been notched to clear interference with the bottom flange of W10X15. There is no documentation authorizing this change.

11. A hand rail was cut to clear interference east of Tank 703 at the upper level. There is no documentation authorizing this change.

12. An X-brace, east of Tank 703 at the lower level damaged.

13. There are several tripping hazards in the upper level mezzanine.

Team Member: Surinder Kumar SKumar	**Team Leader:** William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: HS.6.4	**REVIEW DATE:** 7/18/96

Criteria:

Structures, systems, and components (SSC's) required for safe operations are turned over to the operating organization with required punch list items completed.

Documents Reviewed:

Project Weekly Planning Schedule

Personnel Interviewed:

Project Manager
Project Engineer
Operations Manager

Activities Observed:

Weekly Progress Meetings (April-July 1996)

Appraisal Results:

The Project Manager's Weekly Progress Meeting provided an adequate means of tracking the status of project problems and deficiencies. Punch list items were included in the Weekly Planning Schedule with responsibilities assigned and dates for completion annotated. This system provided up to date information for the Operations Manager. Punch list items were completed or adequate documentation was provided to the Operations Manager to continue tracking operationally related deficiencies.

Team Member: William Previty	**Team Leader:** William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.1.1	REVIEW DATE: 7/17/96

Criteria: The organizational structures for training and qualification and requalification programs are well defined and understood, including the responsibilities of all RSO personnel involved in managing, supervising, and implementing training.

Documents Reviewed:
SDF Training and Qualification Program
Waste Water Operations Organizational Chart
Training Matrix

Personnel Interviewed:
SDF Training Coordinator
RSO/MP Training Manager

Activities Observed:
None

Appraisal Results:
The Waste Water Operations Organizational Chart clearly identifies the Training Coordinator. The SDF Training and Qualification Program Plan clearly defines the required training, qualification and requalification requirements. The RSO/MP Training Manager and SDF Training Coordinator have an adequate understanding of their training roles and responsibilities relative to the SDF.

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.1.2	**REVIEW DATE:** 7/17/96

Criteria: A training, qualification, requalification, and continuing training system is defined and implemented at the project level.

Documents Reviewed:
SDF Training and Qualification Program

Personnel Interviewed:
Training Contact

Activities Observed:
None

Appraisal Results:
The SDF Training and Qualification Program adequately describes that once startup training is completed, requalification and continuing training will be incorporated into AWWT's Training and Qualification Program.

Team Member: T. Parmer	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.1.3	REVIEW DATE: 7/17/96

Criteria: Training and retraining schedules are maintained to keep all operations support services personnel qualified/certified.

Documents Reviewed:
Current Training Schedule

Personnel Interviewed:
RSO Training Coordinator

Activities Observed:
None

Appraisal Results:
An interview with the RSO Training Coordinator revealed that adequate schedules are maintained for all operations personnel.

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.2.1	**REVIEW DATE:** 7/17/96

Criteria: Training and testing materials address technical fundamentals relevant to SDF operations.

Documents Reviewed:
TES 23214 thru 23219

Personnel Interviewed:
SDF Training Contact

Activities Observed:
None

Appraisal Results:
The Training and Evaluation Standards adequately address the technical fundamentals of SDF operation. The TESs are a reflection of the applicable SDF operation procedures.

Team Member: T. Parmer	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.2.2/SO.1.3.2	REVIEW DATE: 7/17/96

Criteria: Operations personnel have successfully completed required fundamentals training related to their responsibilities for SDF and supporting operations.

Documents Reviewed:
SDF Training and Qualification Program
State Certification for 2 operators and 1 supervisor
Training Records

Personnel Interviewed:
None

Activities Observed:
None

Appraisal Results:
The SDF Training and Qualification Program identifies that the "State Certification" for each operator is the only fundamentals training required for this position. A review of the State Certification for SDF operators verified they met the Fundamentals Training requirements.

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.2.3	REVIEW DATE: 7/17/96

Criteria: Operations personnel have an adequate understanding of technical fundamentals related to their responsibilities for SDF operations and supporting operations.

Documents Reviewed:
Operating Procedure 43-C-356

Personnel Interviewed:
SDF Supervisor
SDF Operators

Activities Observed:
Simulated leak outside diked area (discussion)

Appraisal Results:
An SDF Supervisor and operators interviewed had an adequate understanding of the technical fundamentals associated with SDF operations. Their experience with operation of waste water systems in the AWWT provided good technical background. SDF training provided additional technical knowledge specific to the SDF.

Both the supervisor interviewed and the operators provided a satisfactory response to the a simulated casualty in which a leak was detected outside a diked area.

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.2.4	**REVIEW DATE:** 7/17/96

Criteria: The training program includes training which emphasizes procedure compliance, and includes instruction in administrative controls for making and receiving proper authorization for needed procedure changes.

Documents Reviewed:
Standing Orders M-123
Training and Qualification Program
Training Matrix
LP023514

Personnel Interviewed:
SDF Supervisor

Activities Observed:
None

Appraisal Results:
-All SDF operators and supervisors are required, per the SDF TQP, to receive Administrative Practices (LP023514) training. LP023514 requires SDF operators and supervisors know the Standing Orders for FEMP WasteWater Facility Operations. These Standing Orders adequately address procedure compliance and instructions for making procedure changes. The SDF Supervisor could adequately explain the administrative requirements for making needed procedure changes.

Team Member: T. Parmer	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.3.1	**REVIEW DATE:** 7/17/96

Criteria: The SDF Project has adequately defined the project off-normal and emergency response requirements, organization and interfaces between the project and the site emergency response organization.

Documents Reviewed:

PL 3020 Site Emergency Plan
FEMP F.D. Preplans
ERT-01 Emergency Response Team Procedures
SDF Operations Procedures

Personnel Interviewed:

Manager - Safety and Fire Protection Engineering and Emergency Response
SDF Supervisor
Process Engineer
Operators

Activities Observed:

None

Appraisal Results:

Emergency response well planned. SDF personnel very aware of proper response to emergency mitigation. Annual site specific training reinforces procedures.

Team Member: M. Richardson	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.3.2/PP.1.7	REVIEW DATE: 7/17/96

Criteria: Procedures, facilities, equipment, and resources are in place and implemented to respond to off-normal and emergency events as required.

Documents Reviewed:
Operating Procedure 43-C-606

Personnel Interviewed:
SDF Operators
SDF Supervisor

Activities Observed:
SDF Operation Demonstration

Appraisal Results:
Procedures unique to the SDF were not developed to respond to off-normal and emergency events. They were not developed as the design of the SDF includes control and indication functions that not only serve to provide indication of the system automatically operating within set points but also to automatically take corrective action in the event of an alarm condition. The operator essentially monitors system performance and operation in the event of abnormal situations. This design concept is different from operations at other facilities where the operator interprets abnormal or alarm conditions and then manual initiates corrective action. Site emergency procedures including hazardous spills and the building emergency procedure (fire, severe weather, etc.) are applicable to the SDF and do not require promulgation of facility specific emergency procedures. Facilities, equipment and resources are adequate to respond to off-normal and emergency events.

During interviews the supervisor and operators provided a satisfactory response in the event a small leak is detected at the discharge valve of Tank 701.

During the Operation Demonstration, while pumping DE and water to the conditioning tank, the DE/water discharge hose began pumping DE solution onto the process area floor because the discharge end of the hose was not positioned inside the conditioning tank. The operators and supervisors promptly responded by positioning the hose correctly and temporarily fixing the hose to the overhead grating above the tank to prevent the problem from recurring. The supervisor did not record the abnormal condition in the Supervisor's Narrative Log for documentation of event, corrective action, and future corrective actions for a permanent fix. There were no procedures at procedure station that addressed Emergencies at the SDF or AWWT Facilities, e.g. fires, evacuations, etc. (Deficiency PO.3.2-1)

Team Member: T. Parmer/W. Previty	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.3.3	**REVIEW DATE:** 7/18/96

Criteria:

A drill and records program is established to validate emergency procedures and to augment/verify training.

Documents Reviewed:

Project Training and Qualification Program Plan

Personnel Interviewed:

Project Training Coordinator
Operations Manager
Operations Process Engineer
Operators (3)
Supervisor (1)

Activities Observed:

SDF Operational Demonstration

Appraisal Results:

There are no operational emergency procedures specifically developed for the operations conducted in the SDF. The operating system is designed to be operated from the Digital Control System such that alarm indications (operational set points) alert the operator to conditions in plant in which the automatic control system in functionally normally. Situations which might be considered emergency or alarm conditions (not operational set points indications) are designed to alert the operator that corrective action has been taken and the operating systems placed in a safe condition.

Other type facility emergencies such as fire, hazardous spill, and severe weather warnings are adequately addressed in the Site Building Emergency Plan. This plan is adequate for SDF operations. Operators and a supervisor demonstrated satisfactory knowledge of the building emergency procedure including reporting requirements and action to be taken in the facility.

The drill program unique to the SDF is not required as the facility is an element of AWWT Facility. The AWWT Facility drill program is established and is being updated to include SDF operations. The Operations Manager and Facility Owner will need to place additional emphasis on the conduct of drills in the AWWT.

Team Member: William Previty	**Team Leader:** William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.4.1	REVIEW DATE: 7/17/96

Criteria: Project Manager's Standing Orders for the SDF are established to incorporate the principles taken from site operations procedures.

Documents Reviewed:
Standing Orders M-123

Personnel Interviewed:
SDF Supervisor
Process Engineer
SDF Operators

Activities Observed:
None

Appraisal Results:
The Standing Orders M-123 incorporates the principles of CONOPS for Waste Water Facility Operations applicable to the SDF. With respect to independent verification of components (valves and switches), the Operations Manager has addressed the issue by ensuring critical components are independently verified prior to operations. While the Operations Manager under the guidance in the Standing Orders M-123 intends to conduct a full valve and switch lineup prior to operations, the entire lineup will not be independently verified by a second operator. It was suggested that consideration be given to the good management practice of performing an independent verification on the positioning of all valves and switches prior to initial startup of any new systems or restart of any systems following a prolonged shutdown (e.g. > 1 month).

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.4.2/PO.4.3	REVIEW DATE: 7/17/96

Criteria: SDF personnel understand the conduct of operations policies and are effectively implementing the principles.

Documents Reviewed:
Standing Orders M-123
Operating Procedures 43-C-356 thru 43-C-361

Personnel Interviewed:
Process Engineer
Supervisor
Operators

Activities Observed:
Operational Demonstration

Appraisal Results:

Conduct of Operations was adequately implemented in the SDF. Operations Management, Supervisors and Operators were confident in their ability to safely operate the SDF systems and components, and they demonstrated good knowledge and practice of conops principles. Since operations personnel were experienced as a result of conducting operations in the AWWT Facility, the addition of the new SDF functions to those in the AWWT provided essentially no new conops requirements to their shift routine.

Implementation could be improved in the following areas:

"Logkeeping" - The Supervisor Logbook 95-1 is currently retained in the shift supervisor's office. This logbook is greater than 1 year old since last entry. At the discretion of the AWWT Facility Supervisor, this logbook will be forwarded to the Process Engineer for retention or archiving. Additionally, the Process Engineer is responsible for reviewing the logbook (and other operating records) weekly. There was not indication in the logbook that this was being done.

"Required Reading"- A few operators have not completed all required reading for Long Term Orders.

"Timely Orders to Operators" - The Long Term Order index for 1995 and 1996 needs to be updated.

"Equipment and Piping Labeling" - Fiberglass pipe located above Tank 706 is not labeled. Valve to pressure gauge from filter feed line is not labeled. (Deficiency PO.4.2-1)

Team Member: T. Parmer/W. Previty	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.4.3	**REVIEW DATE:** 7/17/96

Criteria: SDF personnel are applying the principles of conduct of operations in their daily activities.

Documents Reviewed:
Refer to PO.4.2

Personnel Interviewed:
Refer to PO.4.2

Activities Observed:
Refer to PO.4.2

Appraisal Results:
Refer to PO.4.2

Team Member: T. Parmer	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.4.4	REVIEW DATE: 7/18/96

Criteria:

Supervisors and managers are trained regarding policies and procedures for ensuring procedural compliance.

Documents Reviewed:

Project Training and Qualification Program Plan

Personnel Interviewed:

Project Training Coordinator
Operations Manager
AWWT/SDF Facility Owner
Supervisor (1)

Activities Observed:

SDF Operational Demonstration

Appraisal Results:

The operational managers and the supervisor interviewed demonstrated adequate knowledge of conduct of operations principles regarding policy and procedures for ensuring procedural compliance. All were knowledge of standard practices regarding terminating operations and placing the facility in a safe condition when a problem with a procedure was encountered. All understand the process of developing, reviewing, and issuing a temporary change notice in accordance with the administrative procedure for changing an operating procedure.

Team Member: William Previty	**Team Leader:** William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.5.1	**REVIEW DATE:** 7/17/96

Criteria: Shift manning levels to support operations are defined in project documentation.

Documents Reviewed:
Standing Orders M-123

Personnel Interviewed:
None

Activities Observed:
None

Appraisal Results:
Chapter 2 "Operations, Organization, and Administration" provides a staffing plan for WasteWater Facilities.

The staffing plan doesn't identify manning levels for the SDF that are consistent with the requirements eluded to in SDF Operating Procedures. Technical Procedure 43-C-361 requires that the SDF Round Sheet be completed every shift by a trained operator. M-123 only requires a SDF operator when the filter is operating. (Deficiency PO.5.1-1)

Team Member: T. Parmer	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.5.2	REVIEW DATE: 7/17/96

Criteria: Sufficient numbers of supervisors and operators are qualified to meet the project manning levels for operations.

Documents Reviewed:
Training Matrix
Personnel Training Records
T-2 Program 23100

Personnel Interviewed:
SDF Training Coordinator

Activities Observed:
None

Appraisal Results:
An adequate number of SDF operators and supervisors are qualified per TQP 23100 as long as one qualified operator and supervisor are assigned to each operating shift. While there are sufficient numbers of supervisors and operators qualified to operate the SDF, some of the five crews which could be assigned to an operating shift do not presently have qualified operators and supervisors. This is easily worked around as SDF operations are not a continuous operation, but are required when an adequate volume of waste is ready for processing and filtering. (See related deficiency PO.5.1-1)

Qualification of operators and supervisors for each crew was completed during the SSR.

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.6	**REVIEW DATE:** 7/17/96

Criteria: The requirements identified in the health and safety controls are implemented and effective.

Documents Reviewed:

Standing Orders M-123
Operations Procedures 43-C-356 through 43-C-361
RWP 96-05-G13-357 & 356 and 96-05-G13-417

Personnel Interviewed:

SDF Process Engineer
Supervisor
Operators

Activities Observed:

SDF Operations Demonstration

Appraisal Results:

Results Satisfactory

Team Member: M. Richardson	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.7 and PP.3	REVIEW DATE: 7/18/96

Criteria:

A systematic administrative program is defined and implemented to ensure that modifications to systems are reviewed for potential impacts on training and qualifications and are reflected in revised training and qualification documents.

A systematic administrative program is defined and implemented to ensure that modifications to systems are adequately reflected in revised operations and maintenance procedures.

Documents Reviewed:

Design Change Notices

Personnel Interviewed:

Project Training Coordinator
Operations Manager
Operations Process Engineer

Activities Observed:

SDF Operational Demonstration

Appraisal Results:

The Operations Manager and Process Engineer were involved in the review of modifications to the SDF and were responsible for determining which modifications impacted procedures, training, and maintenance. The Operations Process Engineer had closely monitored construction in the facility and had been personally involved in reviewing all modifications to the DCS system operational program. The Operations Process Engineer modified operating procedures and coordinated with the Project Training Coordinator to make any necessary changes to the training program.

Team Member: William Previty	Team Leader: William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.8.1	**REVIEW DATE:** 7/17/96

Criteria: Training and qualification programs for operators and supervisors are based on the latest revisions of procedures.

Documents Reviewed:
Training and Qualification Program TQP 023100
TES # 23215

Personnel Interviewed:
Training Contact

Activities Observed:
None

Appraisal Results:
Review of TES 23215 indicates that the latest version of 43-C-361 was used to train and qualify SDF personnel.

Team Member: T. Parmer	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.8.2	REVIEW DATE: 7/17/96

Criteria: Adequate training and qualification have been completed and documented for procedures performed by operations personnel, supervisors and management as appropriate.

Documents Reviewed:
Personnel Training Records
Standing Orders M-123
SDF Training Matrix

Personnel Interviewed:
Training Contact

Activities Observed:
None

Appraisal Results:
Supervisors and operators are required, per M-123 to complete the same initial training, SDF Job Briefings/Training Evaluation Standards and Job Specific Requirements. Managers are required to complete site access training and AWWT/SDF safety, Radcon, and Hazardous Chemicals Briefings. The training for operators, supervisors, and managers is adequate and a spot check was done on personnel training records to verify completion of training.

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.8.3	REVIEW DATE: 7/17/96

Criteria: Effectiveness of training is demonstrated by operations personnel and supervisors.

Documents Reviewed:
None

Personnel Interviewed:
Operators
Supervisors

Activities Observed:
Operations Demonstration

Appraisal Results:
Knowledge level of SDF operations was adequately demonstrated by the operators and supervisors. They were all familiar with the Technical Procedures and operation of SDF process equipment. Recommend additional hands-on training (similar to the operations demo) be provided to the operators and supervisors to increase their experience level at operating the SDF facility. Continue to use the process engineer to assist in training and operations until the desired experience level is achieved.

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.9	**REVIEW DATE:** 7/18/96

Criteria:

Management personnel responsible for operation of the SDF Project possess the management, supervisory, and technical skills required to ensure safe operation of the facility.

Documents Reviewed:

AWWT SDF Training and Qualification Program Description
DOE Conduct of Operations Assessment of the AWWT Facility (May 1995)

Personnel Interviewed:

Project Training Coordinator
Project Manager
Operations Manager

Activities Observed:

Project Manager's Weekly Status Meeting
SDF Informal Tours

Appraisal Results:

Managers and technical support personnel did not complete the minimum training required in the training and qualification program description. (See Deficiency 9.1-1)

The training commitments in the training program description for managers and technical support personnel consisted of a series of briefings. Based on personal observations at the Project Manager's Weekly Meeting and tours of the facility, management and technical personnel demonstrated good management practices and technical knowledge. The training program description for managers could have used managers previous experience and qualifications as the major element of qualifications on this project.

Supervisory and management training deficiencies were noted in the May 1995 DOE CONOPS Assessment of the AWWT Facility. Training for managers and supervisors was required to be completed in the corrective action plan by end of 1995. This training has not been fully completed. (See Deficiency 9.1-1)

Team Member: William Previty	**Team Leader:** William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: MP.1.1 - MP.1.3	**REVIEW DATE:** 7/18/96

Criteria:

Administrative procedures exist which establish a system for identifying, documenting and reviewing deficiencies resulting from internal and external audits and appraisals of SDF activities. The corrective action procedures and policies are current and implemented into the workforce. A process is developed for ensuring implementation schedules for corrective actions necessary to resolve post start finding generated by the SSR is in place.

Documents Reviewed:

AWWT Readiness Assessment Final Report
DOE Conduct of Operations Assessment of the AWWT Facility (May 1995)
AWWT Type "B" Investigation Corrective Action Reports
Independent Surveillance of Corrective Action of AWWT Assessments (Draft)

Personnel Interviewed:

Project Manager
Operations Manager
Project Training Coordinator
AWWT Facility Owner
AWWT/SDF Operations Supervisor
Operations Assurance Surveillance Personnel

Activities Observed:

SDF Tours

Appraisal Results:

Management personnel have a satisfactory process and system to address deficiencies from previous assessments. A review of previous assessments and investigations indicated that the AWWT Project Management had documentation to support that corrective action had been completed or adequate plans were in place. An independent surveillance was being conducted by QA personnel to verify corrective action reported by the project - the draft report indicated that corrective action had been completed satisfactorily with exception of a few areas which were still being reviewed.

(continued)

Team Member: William Previty	**Team Leader:** William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: MP.1.1 - MP.1.3 (continued)	**REVIEW DATE:** 7/18/96

Appraisal Results: (continued)

Several areas were examined to determine if corrective action had been effective for deficiencies identified on previous assessments. Lock and tag was specifically reviewed and no deficiencies were observed. Training which included lessons learned from past assessments had been conducted. Supervisor training was reviewed and it was determined that not all training identified in the corrective action report for the Type "B" Investigation of AWWT had been completed as planned by the end of 1995. (See Deficiency PO.9-1)

An adequate system for tracking deficiencies identified during this SSR exists.

Team Member: William Previty	**Team Leader:** William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: MP.2.1- MP.2.3	REVIEW DATE: 7/18/96

Criteria: A program or system has been established and implemented to identify applicable DOE Orders and other requirements. This program or system helps to maintain facility conformance as new or revised requirements are received. Compliance assessments are performed. Deviations from the orders and regulation have been identified and corrective action identified and approved by management.

Documents Reviewed: The FERMCO Management Plan identifies project specific planning requirements. The Standing Orders for FEMP Waste Water Facility Operations, M-123 identifies the applicable DOE Orders for operations. The project specific QA Plan, 2505-QA-003, identifies the DOE and FERMCO drivers for the QA program.

Personnel Interviewed: N.A.

Activities Observed: N.A.

Appraisal Results:

Applicable DOE Orders and other requirements are established in the FERMCO Management Plan. Site procedures and project procedures were used or prepared to implement applicable requirements, programs, and procedures necessary for the SDF Project. No deviations were identified.

The QA Job Specific Plan identifies NVO-325 as a requirements document. This is not the best citation. The FEMP Application will provide better guidance for compliance to NVO-325. The project should follow the established program.

Team Member: J. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: MP.3.1 - MP.3.3	**REVIEW DATE:** 7/18/96

Criteria:

Policies exist defining the responsibility, authority, and accountability from the top level of management to the operating shift supervisors. Functional responsibility and interfaces for the SDF Project are clearly understood by personnel. The line organization are not overburdened by excessive duties or significant duties unrelated to the day-to-day activities.

Documents Reviewed:

Waste Water Facilities Project Manager's Standing Orders
SDF Project Management Administrative Organization Plan

Personnel Interviewed:

Project Manager
Operations Manager
AWWT Facility Owner
AWWT/SDF Operations Supervisor

Activities Observed:

SDF Tours

Appraisal Results:

The Standing Orders which encompass the SDF adequately define functions, assignments, responsibilities, and reporting relationships. Implementation of the orders with respect to responsibility for control of safety was reviewed in the field during personal observations and in the conduct of interviews. Safety requirements are adequately addressed in the operations procedures and in the Radiation Work Permit (Draft - Final version to be submitted to resolve a Pre-start Finding reported by the Project).

The Operations organization under the direction of the Operations Manager understood there responsibilities and reporting relationships. They were focused on their respective duties and appear fully capable of controlling operations in a safe manner in the SDF.

Team Member: William Previty	**Team Leader:** William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PP.1.1	REVIEW DATE: 7/17/96

Criteria: Procedures specify process requirements, commitments, and other operational/administrative limitations to ensure operation within safe bounds.

Documents Reviewed:
Procedures 43-C-356, 43-C-357, 43-C-358, 43-C-359, 43-C-360, 43-C-361

Personnel Interviewed:
AWWT Precess Engineer,
AWWT Facility Supervisor,
SDF Supervisor

Activities Observed:
N. A.

Appraisal Results:
A review of the procedures listed above identified several concerns. Procedure 43-C-356, Receiving Slurries and Chemicals at the AWWT Slurry Dewatering Facility, Step 8.3.1, instructs the supervisor to verify that there is analytical data for percent U235, percent solids, and pH. The procedure does not identify acceptable ranges. Therefore, the supervisor only has to verify the data is available, not that it is acceptable. The acceptance is documented by Environmental Compliance personnel. This documentation is provided to the AWWT Facility Supervisor. Traceability from the analytical data results to the Environmental Compliance review/approval to the supervisor's authorization to accept the waste could not be demonstrated during the review. Procedure 43-C-357, Step 8.1, identifies a "Miscellaneous Batch Treatment Sheet" for providing the treatment instructions to the SDF supervisor. When asked how this batch sheet is generated, the answer was given that the process engineer generates the sheet. There is no procedure for this activity, and there is no traceability to analytical data used to document the acceptance of the slurry for dewatering.

It is recommended that a documentation trail be provided by filing the documentation together would improve the process and relieve the SDF supervisor from unnecessary risk (i.e.; receiving waste slurries based on verbal authorization).
Procedure 43-C-357, Steps 8.5, 8.6, and 8.7 refer the operator to procedure 43-C-356 for chemical make-up instructions. Procedure 43-C-356 does not contain make-up instructions for these chemicals, rather pre-mixed chemicals are used. The procedure should identify the mixture used and 43-C-357 should be revised to identify the chemical mixtures to be used.

Waste packaging instructions are insufficient in the SDF. Procedure 43-C-358 does not identify the weight limits or define WMB capacity (full) for loading WMBs. The packaging procedures (PT-007) which provides this information is not available in the SDF or AWWT procedure record book stations.

See Deficiency Form No: PP 1.1-1

Team Member: J. Rowe	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PP.1.1	**REVIEW DATE:** 7/17/96

Criteria: Procedures specify process requirements, commitments, and other operational/administrative limitations to ensure operation within safe bounds.

Documents Reviewed:

Standing Orders M-123
Operations procedures 43-C-356 through 43-C-361
RWP 96-05-G13-357 & 356 and 96-05-G13-417

Personnel Interviewed:

SDF Occupational Safety and Health Rep.

Activities Observed:

None

Appraisal Results:

The safe handling of chemicals used at the SDF is adequately defined in Technical Procedure. The requirement to document the analytical data for miscellaneous slurry is not included in the technical procedure. It must be a requirement to keep analytical data results for miscellaneous slurry in the Shift Supervisor's Logbook. Standing Orders M-123, chapter 11, para. 11.3.2.A provides the rationale and requirement for this. (Deficiency PP.1.1-1)

Team Member: M. Richardson/T. Parmer	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PP.1.2	REVIEW DATE: 7/17/96

Criteria: Procedures are technically correct, consistent, and written to the required level of detail to ensure safe operation and to allow strict procedural compliance. When appropriate, the sequence for conducting operations and plant equipment line-ups is specified.

Documents Reviewed:
Operating Procedure 43-C-360

Personnel Interviewed:
None

Activities Observed:
Valve Labeling

Appraisal Results:
Baseline valve lineup table does not show all valves. Valve #s IA-30, IA-ZV-42, IA-29, IA-31, IA-32, TW-V-25, and IA-11. A thorough walkdown of the entire system should be completed to ensure all valves are labeled, and included on the valve lineup table. (Deficiency PP.4.2-1)

There is no electrical switchboard lineup for breakers located in the SDF electrical equipment room. This switchboard is the principal power supply for major equipment in the SDF. While there was no indication that equipment was not properly lined up for operations, an electrical lineup could prove useful as a reference for system operations or following a major loss of power. This lineup could be included in the same procedure as the baseline valve lineup. This suggestion was passed to the Operations Manager for consideration.

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PP.1.3	REVIEW DATE: 7/17/96

Criteria: Procedures reflect the configuration described in the SA/ASA.

Documents Reviewed:
Standing Orders M-123
Operations Procedures 43-C-356 through 43-C-361
RWP 96-05-G13-357 & 356 and 96-05-G13-417
SA/Auditable Safety Analysis, 94-0038

Personnel Interviewed:
Project Safety and Health Officer
Process Engineer
Supervisor

Activities Observed:
Operation of Dust Collector and HVAC Systems

Appraisal Results:
With the exception of the area noted below, the SA/ASA requirements have been reflected in the procedures, especially in the areas of receiving and handling chemicals used at the SDF, and lockout/tagout requirements.

The area not very well addressed is radiological controls safety. The SA/ASA requires, as an operating goal, that the process area be maintained under negative pressure of at least 0.1 inch water, and that the control room operator will be stationed in an enclosed control room which has its own HVAC unit. With the HVAC units and the dust collector operating, all doors closed, no significant change in pressure was observed in the control room versus the process area and the process area versus outside the SDF. This indicates that no control of rad dust would be provided to unprotected control room operator nor would any rad dust be prevented, by ventilation means, from exiting the SDF.

(Deficiency PP.1.3-1)

Team Member: M. Richardson/T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PP.1.4	REVIEW DATE: 7/17/96

Criteria: Operating procedures reflect the current configuration of systems important to the SDF Project.

Documents Reviewed:
Operating Procedures 43-C-356 thru 43-C-361

Personnel Interviewed:
Process Engineer
Supervisor
Operators

Activities Observed:
None

Appraisal Results:
All procedures adequately reflect current systems important to the SDF Project except as previously noted for identification of valve and piping labeling and the issue cited with radiological controls safety.

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PP.1.5	**REVIEW DATE:** 7/17/96

Criteria: Technical details are correct and consistent between procedures, drawings, system descriptions, etc.

Documents Reviewed:
Refer to PP.1.4

Personnel Interviewed:
Refer to PP.1.4

Activities Observed:
Refer to PP.1.4

Appraisal Results:
Refer to PP.1.4

Team Member: T. Parmer	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PP.1.6	REVIEW DATE: 7/17/96

Criteria: Procedures address normal, off-normal, and emergency events in accordance with SA/ASA and other safety basis commitments.

Documents Reviewed:
Refer to PP.1.3

Personnel Interviewed:
Refer to PP.1.3

Activities Observed:
Refer to PP.1.3

Appraisal Results:
Refer to PP.1.3

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PP.1.7	REVIEW DATE: 7/17/96

Criteria: Emergency and off-normal operating procedures effectively guide the operations staff in responding to events.

Documents Reviewed:
Refer to PO.3.2

Personnel Interviewed:
Refer to PO.3.2

Activities Observed:
Refer to PO.3.2

Appraisal Results:
Refer to PO.3.2

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PP.1.8	REVIEW DATE: 7/17/96

Criteria: An adequate policy governing the use of procedures is defined and implemented and provides designated authority to deviate from written procedures during an emergency, if necessary, to protect personnel and equipment or to maintain a safe condition.

Documents Reviewed:
OP-1016

Personnel Interviewed:
None

Activities Observed:
None

Appraisal Results:
OP-1016 adequately defines the authority to deviate from written procedures during an emergency.

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PP.2.1	REVIEW DATE: 7/17/96

Criteria: A program is defined and implemented that provides for evaluation and approval of temporary changes and timely removal of the changes when the purpose is superseded.

Documents Reviewed:
M-140
AWWT Procedure Station

Personnel Interviewed:
None

Activities Observed:
None

Appraisal Results:
M-140 adequately defines the mechanism to temporarily change procedure changes and removal, if applicable, of these changes when the purpose of the charge is superseded.

The AWWT Procedure Station does not maintain a current version of M-140.

(Deficiency HS.3.7-1)

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PP.2.2	REVIEW DATE: 7/18/96

Criteria: An adequate program is defined and implemented to ensure that changes to the AWWT FSAR and the SDF SA/ASA process requirements and commitments are reflected in procedures.

Documents Reviewed:

AWWT Slurry Dewatering Facility Safety Assessment
Advanced Waste Water Treatment Facility Final Safety Analysis Report
USQD-96-0020

Personnel Interviewed:

Operations Manager

Activities Observed:

Not Applicable

Appraisal Results:

Reviewed the safety basis management/change process and noted that any changes to the safety basis documentation were adequately reviewed by the project management responsible for initiating changes to procedures. The approval process for safety basis documentation included direct involvement of the Project Manager for the FSAR and the SDF Operations Manager for the Safety Assessment. USQD-96-0020 also evaluated SDF operations against the AWWT Safety Basis. A representative number of process requirements and safety commitments were checked against the operating procedures and no deficiencies were noted. The operating procedure review process also included representation by the Project Safety and Health Representative who was responsible for ensuring that the operating procedures contained the safety requirements specified in the Safety Assessment.

Team Member: W. Previty	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PP.2.3	REVIEW DATE: 7/17/96

Criteria: Controls are defined and implemented to ensure that only current and accurate procedures are available for distribution and use by plant personnel, including their use in training programs.

Documents Reviewed:
M-140
AWWT Procedure Station

Personnel Interviewed:
None

Activities Observed:
None

Appraisal Results:
M-140 adequately defines the program to ensure only current and accurate procedures are available and issued to all controlled copy users.

It is up to the user to implement the replacement of the superseded procedure with the current version. Program can be improved by requiring management self assessments and/or independent assessmentsl to periodically inspect the Procedure Stations to verify only current procedures are maintained. AWWT Procedure Station is not maintaining current copies of all procedures.

(Deficiency HS.3.7-1)

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: PO.7 and PP.3	REVIEW DATE: 7/18/96

Criteria:

A systematic administrative program is defined and implemented to ensure that modifications to systems are reviewed for potential impacts on training and qualifications and are reflected in revised training and qualification documents.

A systematic administrative program is defined and implemented to ensure that modifications to systems are adequately reflected in revised operations and maintenance procedures.

Documents Reviewed:

Design Change Notices

Personnel Interviewed:

Project Training Coordinator
Operations Manager
Operations Process Engineer

Activities Observed:

SDF Operational Demonstration

Appraisal Results:

The Operations Manager and Process Engineer were involved in the review of modifications to the SDF and were responsible for determining which modifications impacted procedures, training, and maintenance. The Operations Process Engineer had closely monitored construction in the facility and had been personally involved in reviewing all modifications to the DCS system operational program. The Operations Process Engineer modified operating procedures and coordinated with the Project Training Coordinator to make any necessary changes to the training program.

Team Member: William Previty	Team Leader: William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.1.1	**REVIEW DATE:** 7/17/96

Criteria: The SDF Project has adequately defined the project emergency response requirements, organization and interfaces between the project and the site emergency response organization.

Documents Reviewed:

Standing Orders M-123
SDF Operating Procedures
PL 3020 Emergency Plan
FEMP F.D. Preplans
ERT 01 Emergency Response Team Manual

Personnel Interviewed:

Process Engineer
Manager, Safety and Fire Protection Engineering and Emergency Response

Activities Observed:

None

Appraisal Results:

Excellent program already in effect site wide.

Team Member: M. Richardson	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.1.2	REVIEW DATE: 7/17/96

Criteria: Procedures, facilities, equipment, and resources are in place and implemented to respond to postulated emergency events as required.

Documents Reviewed:

PL 3020 Emergency Plan
FEMP F.D. Preplans
ERT 01 Emergency Response Team Manual

Personnel Interviewed:

Manager, Safety and Fire Protection Engineering and Emergency Response

Activities Observed:

None

Appraisal Results:

Results Satisfactory

Team Member: M. Richardson	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.2.1 - SO.1.2.3	REVIEW DATE: 7/18/96

Criteria:

An adequate formal work control process provides formal work authorization, planning, scheduling, and backlog measures; work controlled by written procedures, and post maintenance testing. Adequate staffing and resources are provided to assure quality work. An effective procurement and material control process provides parts, materials, and services for work activities.

Documents Reviewed:

CMMS Report 179 for Building 51-0B-XXX

Personnel Interviewed:

Operations Manager
AWWT Maintenance Supervisor
AWWT/SDF Facility Owner
AWWT Operations Process Engineer

Activities Observed:

Not Applicable

Appraisal Results:

The work control process for the SDF falls under the existing AWWT Maintenance Program. Adequate procedures and staffing are in place to encompass the addition of the SDF to the AWWT Maintenance Program. The CMMS Program has been implemented for the SDF and is adequate. A review of the equipment manufacturer's specifications was conducted to determine unique materials and supplies required to operate the SDF.

Team Member: J. Rowe	Team Leader: William Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.3.1	REVIEW DATE: 7/17/96

Criteria: Sufficient personnel, equipment, and reference materials are available to provide occupational safety and health support for the SDF Project.

Documents Reviewed:

Safety and Health FY96 Plan

Personnel Interviewed:

Manager, Occupational Safety and Health

Activities Observed:

N/A

Appraisal Results:

Based on an interview with the Manager, Occupational Safety and Health and a review of the FY96 Safety and Health Plan, there are sufficient personnel, equipment and resources present to provide adequate coverage for operations.

Team Member: M. Richardson	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.3.2	**REVIEW DATE:** 7/17/96

Criteria: The content of training programs adequately addresses all requirements and hazards at the SDF facility, is effectively communicated, and records are maintained.

Documents Reviewed:

AWWT SDF Training and Qualification Program Description TQP023100
AWWT SDF SA/Auditable Safety Analysis 94-0038, Rev.2

Personnel Interviewed:

Operators

Activities Observed:

SDF Facility Operations Demonstration
Operator Interviews

Appraisal Results:

-Results Satisfactory

Team Member: M. Richardson/T. Parmer	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.4.1	**REVIEW DATE:** 7/17/96

Criteria: The SDF Project has adequately defined the project radiation protection requirements, organization and interfaces. The organization and administration of the radiological protection program ensures effective implementation and control of radiological protection activities.

Documents Reviewed:

RWP 96-05-G13-357 & 356 and 96-05-G13-417
M-123 Standing Orders
SA/Auditable Safety Assessment 94-0038, Rev.2

Personnel Interviewed:

Radiological Engineer

Activities Observed:

None

Appraisal Results:

Radiological postings and boundaries inside the SDF and on the perimeter are not in place. PPE and other supplies are not in the area. (Pre-start deficiency reported by the Project Manager.)

Team Member: M. Richardson	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.4.2	**REVIEW DATE:** 7/17/96

Criteria: Staffing for the SDF Project is adequate for operations.

Documents Reviewed:
None

Personnel Interviewed:
Project Radiological Engineer
Operations Manager

Activities Observed:
Planned Layout for the Control Point and Radiological controlled areas within SDF

Appraisal Results:
Radiological technician support is assigned full time to the AWWT Facility on first shift. Support for second and third shift are on as required/on-call basis. Coordination will be required on the back shifts for rad tech support to cover operator tours.

This arrangement should be adequate to support SDF operations and tours.

Team Member: W. Previty	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.4.3	**REVIEW DATE:** 7/17/96

Criteria: The SDF Project effectively implements the following radiation protection elements: radiological posting is effectively utilized to alert personnel to the presence of radiation and radioactive materials and to aid them in minimizing exposures and preventing the spread of contamination; radiological work is planned and controlled to ensure safety and to maintain exposures ALARA; PPE and other radiation protection supplies are available to support operations.

Documents Reviewed:

RWPs for SDF
Auditable Safety Assessment 94-0038, Rev.2

Personnel Interviewed:

Radiological Engineer

Activities Observed:

None

Appraisal Results:

-Radiological postings and boundaries inside and on the perimeter are not in place at this time. PPE and other supplies are not in the area presently. Boundaries and limits are established, but not physically in place. (Pre-start deficiency reported by the Project Manager.)

Team Member: M. Richardson	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.5.1	REVIEW DATE: 7/17/96

Criteria: The quality assurance staff for SDF project are trained and qualified to perform overview activities and other listed functions.

Documents Reviewed:
N. A.

Personnel Interviewed:
Quality Assurance Training/Qualification

Activities Observed:
N.A.

Appraisal Results:
The Quality Assurance Training and Qualification Matrix developed in preparation for DOE/NV Audit was verbally reviewed with the QA personnel responsible for maintaining the matrix. Both QA personnel assigned to the SDF project were current with required training and qualifications for performing their responsibilities.

Team Member: J. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.5.2	REVIEW DATE: 7/17/96

Criteria: Operations surveillance provides for independent verification that audits/surveillances are properly conducted and data are reviewed and analyzed in a timely manner.

Documents Reviewed:
AWWT Operation Manager CC:Mail meeting agenda

Personnel Interviewed:
Operations Manager,
AWWT Facility Supervisor,
AWWT Maintenance Supervisor

Activities Observed:
N.A.

Appraisal Results:
During the review, the Supervisors interviewed were not able to identify specific assessments conducted by operations to verify operations are properly performed. However, the AWWT operation manager produced meeting minutes in which assessments planned for the week were identified. Because the field personnel could not identify this process, it is recommended that the Operation Manager initiate a more formal response program to verify the assessments are being performed.

Team Member: J. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.5.3	**REVIEW DATE:** 7/17/96

Criteria: Acceptance tests and inspections are verified to be accurate and complete for systems important to safe operations.

Documents Reviewed:
QA ICAT/SOT Procedure Verification Documentation

Personnel Interviewed:
QA Inspector

Activities Observed:
N.A.

Appraisal Results:
Refer to CRA No: HS. 6.1 for appraisal results.

Team Member: J. Rowe	**Team Leader:** W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.5.4	REVIEW DATE: 7/17/96

Criteria: Calibration of measurement, test, and monitoring systems are assured and verified.

Documents Reviewed:
QA ICAT/SOT Test Procedure Record,
Calibration stickers for items 51-0B033-AIT (2/16/96), 51-0B021A (4/19/96), and 51-0B028-LIT (none),
CMMS Equipment List for SDF

Personnel Interviewed:
QA Inspector,
QA Engineer

Activities Observed:
N.A.

Appraisal Results:
The calibration stickers were observed on the devises that were identified as calibrated. The calibration dates on the stickers and calibration due dates matched those listed on the CMMS equipment list for the SDF. Calibration stickers were not observed on devices related to the caustic day tank which is consistent with the QA records. The ICAT/SOT testing for this system has not been verified by QA.

Team Member: J. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.5.5	REVIEW DATE: 7/17/96

Criteria: The Quality Assurance program is effectively implemented through QA review and approval of operating and maintenance procedures and work activities.

Documents Reviewed:
Procedures 43-C-356, 43-C-357, 43-C-358, 43-C-359, 43-C-360, 43-C-361, 43-C-502 reviewed in RSO Document Administration Files did not include QA review/approval signatures. Quality Assurance Job Specific Plan for the Slurry Dewatering Facility Project, 2505-QA-003, Revision 0, Section 10.2

Personnel Interviewed:
RSO Document Administration Personnel

Activities Observed:
N.A.

Appraisal Results:
The job Specific Quality Assurance Plan requires the QA Engineer to develop assessment schedules for PM and calibration of SDF equipment. The schedules were draft and did not include surveillance due dates. The QA review of the ICAT/SOT Test Procedure Document Change Notices was not observed other than the written DCN in the left margin of the QA records.

See Deficiency Form No: SO. 1.5.5-1

Team Member: J. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.6.1	REVIEW DATE: 7/17/96

Criteria: The Waste Characterization program is clearly defined and documented, has well defined interfaces and responsibilities, and includes a well defined and adequate system for documenting characterization has been established.

Documents Reviewed:
N.A.

Personnel Interviewed:
Waste Program Management Characterization Section Manager,
Waste Programs Technical Support Personnel,
AWWT Process Engineer

Activities Observed:
N.A.

Appraisal Results:
The FERMCO Waste Characterization Program is established and functional. The program is applicable to the SDF operation and will be implemented through existing plans and procedures. While a Material Evaluation File Number has been assigned to the filter press sludge, the MEF has not been completed. Sampling is required to confirm the characterization. The sampling plan has not been written and preliminary plan are to wait until waste is generated. The first RCRA sampling event is planned after 100 boxes or sludge is generated. It is recommended that the sampling be initiated when the sludge is first generated rather than waiting until 100 boxes are filled. For the purposes of radiological characterization, the sampling frequency was not consistent with past MC&A practice. It is recommended that MC&A be consulted for assisting with establishing the isotopic assay sampling frequency.

See Deficiency Form No: SO. 1.6.1-1

Team Member: J. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.6.2	REVIEW DATE: 7/17/96

Criteria: There are adequate procedures for systematic review and audit of the Waste Characterization program.

Documents Reviewed:

SDF and AWWT procedure record book stations

Personnel Interviewed:

AWWT Process Engineer
AWWT Facility Supervisor

Activities Observed:

Filter press unloading operation

Appraisal Results:

While observing the filter press unloading operation, a concern was identified relative to the volume of waste generated from each press run. The estimated volume to be generated will fill one of the boxes half full and the other only three quarters full. Because there is not Motor vehicle operator assigned to the SDF, the AWWT Process Engineer indicated that the 3/4 full box would be removed after each press unloading operation. This will result in a void space that will increase the off site disposal cost. It is recommended that the operation evaluate the potential disposal cost savings relative to coordinating MVO support schedules.

The SDF and AWWT procedure stations did not contain Packaging and Transportation procedures relative to packaging waste for off site disposal. It is recommended that the SDF consider adding specific steps to identify the waste box weight limits and container inspection requirements or secure copies of the applicable procedures (PT-0003, PT-0005, and PT-0007).

See Deficiency Form No: SO. 1.6.2-1

Team Member: J. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.6.3	REVIEW DATE: 7/17/96

Criteria: Waste Programs QA surveillance provides for independent verification that operations are properly conducted and data are reviewed and analyzed in a timely manner.

Documents Reviewed:

None Developed

Personnel Interviewed:

AWWT QA Engineer
WPQA, Chief Waste Certification Official

Activities Observed:

N.A.

Appraisal Results:

The SDF Job Specific Quality Assurance Plan and the SDF Start-up Plan identify NTS as the initial disposal option for SDF sludge. The waste acceptance criteria for the NTS requires a regular surveillance of operations critical to the certification of waste for shipment to the NTS. This surveillance is intended to support the certification process and is usually performed by QA. With planned organization changes, this project provides an excellent opportunity to develop the certification interfaces that will enable waste to be transitioned smoothly between FERMCO projects. A smooth transition is critical to efficient disposal of waste generated from other projects.

See Deficiency Form No: SO. 1.6.3-1

Team Member: J. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR APPRAISAL FORM

CRA No: SO.1.6.4	REVIEW DATE: 7/17/96

Criteria: Calibration of measurement, test, and monitoring systems are assured and verified.

Documents Reviewed:
Procedure 43-C-361

Personnel Interviewed:
N.A.

Activities Observed:
N.A.

Appraisal Results:
Procedure 43-C-361 does not require documenting scale response checks, nor does it specify daily/prior to use. Further interviews determined that the daily scale check would not be documented. SDF personnel indicated that they do not have a check weight and would delete the requirement form the procedure. If this scale weight is to be used to determine the final weight of the waste, then checking the scale calibration prior to use is required. The weight of the waste is used to calculate the uranium content in the container.

Waste packaging instructions are insufficient in the SDF. Procedure 43-C-358 does not identify the weight limits or define WMB capacity (full) for loading WMBs. The packaging procedures (PT-007) which provides this information is not available in the SDF or AWWT procedure record book stations.

No schedule has been established for sampling SDF sludge to determine percent moisture, percent uranium, percent U235, or RCRA analysis. Procedure 43-C-3 instructs operators to sample "as instructed by the supervisor." This approach is not acceptable for efficient waste management of the SDF sludge nor is it timely for evaluating the process controls. It is recommended that the SDF Operations develop sampling plans for completing these sampling events including schedules, contingencies, and flexibility to increase or decrease frequency based on the analytical results.

See Deficiency Form No: PP 1.1-1

Team Member: J. Rowe	Team Leader: W. Previty

Fernald Environmental
FERMCO
Restoration Management Corporation

INTEROFFICE MEMORANDUM

To:	Dave Capelle, MS52-5	**Date:**	July 24, 1996
Location:	Fernald	**Reference:**	N/A
From:	Bill Previty, MS70	**FERMCO #:**	M:PQA(PA):96-0076
Location:	Fernald	**Client:**	DOE DE-AC24-92OR21972
Extension:	648-5130	**Subject:**	**STANDARD STARTUP REVIEW - ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY**

c: File Record Storage Copy 106.4.4.6
Dave Brettschneider, MS52-5, Fernald
Jim Curry, MS43, Fernald
Randy Gist, MS45, DOE-FN
Ev Henry, MS52-5, Fernald
Rob Janke, MS45, DOE-FN
John Kappa, MS45, DOE-FN

Without Attachment
Dick Butterfield, MS52-5, Fernald
Jack Hughes, MS52-5, Fernald
Marc Jewett, MS52-5, Fernald

Attached are findings and observations developed from the conduct of the Standard Startup Review - Advanced Wastewater Treatment Slurry Dewatering Facility. It is requested that you provide action plans and resolutions for pre-start findings.

If you have any questions, please give me a call at extension 5130.

WHP:mam
Attachment

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: HS.2.2	Deficiency No: HS.2.2-1	Deficiency Date: 7/19/96

Requirement:

Hazards have been identified and mitigators/controls have been specified. SPR 12-14 requires a noise evaluation to be performed on all new equipment.

Deficiency:

A noise evaluation must be performed in accordance with SPR 12-14. The project reported that preliminary noise readings have been taken, but a formal survey will not be completed until all equipment is running during actual SDF processing operations.

Check One:

Observation ___ **Post-Start Finding** _X_ **Pre-Start Finding** ___

Team Member: M. Richardson	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: HS.2.2	Deficiency No: HS.2.2-1

Finding Designation: **Post-Start** __X___ **Pre-Start** _____

Action Plan:

Resolution:

Responsible Individual: _____ (Print Name) _____ (Signature) _____ (Date)

Corrective Action Completion

Certified By:
(Performing Org.) _____ (Print Name) _____ (Signature) _____ (Date)

Verified By:
(ORR Team Leader)
(for pre-start only) _____ (Print Name) _____ (Signature) _____ (Date)

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: HS.3	Deficiency No: HS.3-1	Deficiency Date: 7/22/96

Requirement:

ED-12-5002, Rev. 1, Engineering Design Change Process

Deficiency:

Chester Environmental wrote their own specifications to supplement the specifications written by Parsons. Because of the nature of the project, the sub-contractor made changes as deemed necessary with the concurrence of Construction Manager, however some changes were made to the Certified For Construction (CFC) Drawings without proper documentation and Construction Manager concurrence.

Check One:

Observation__ **Post-Start Finding** _X_ **Pre-Start Finding** ___

Team Member: S. Kumar	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: HS.3	Deficiency No: HS.3-1

Finding Designation: Post-Start __X___ Pre-Start _____

Action Plan:

Resolution:

Responsible Individual: _____ Print Name _____ Signature _____ Date

Corrective Action Completion

Certified By: (Performing Org.) _____ Print Name _____ Signature _____ Date

Verified By: (ORR Team Leader) (for pre-start only) _____ Print Name _____ Signature _____ Date

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: HS.3	Deficiency No: HS.3-2	Deficiency Date: 7/19/96

Requirement:

Facility design conforms with applicable codes (e.g. fire, electrical, toxic chemical, etc.)

Deficiency:

Electrical junction boxes located in the diked area external to Building 51B should be verified to determine if they meet potential wet application.

Check One:

Observation___ **Post-Start Finding** ___ **Pre-Start Finding** X___

Team Member: M. Richardson	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: HS.3	Deficiency No: HS.3-2

Finding Designation: Post-Start _____ Pre-Start __X__

Action Plan:

Resolution:

Responsible Individual: _____ (Print Name) _____ (Signature) _____ (Date)

Corrective Action Completion

Certified By: (Performing Org.) _____ (Print Name) _____ (Signature) _____ (Date)

Verified By: (ORR Team Leader) (for pre-start only) _____ (Print Name) _____ (Signature) _____ (Date)

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: HS.3.7	Deficiency No: HS.3.7-1	Deficiency Date: 7/17/96

Requirement:

The Standing Orders for FEMP Waste Water Facility Operations, M-123, Start-up Plan for the AWWT Slurry Dewatering System, Section 4.1, Operation Procedures Availability and Use, OP-1016, FERMCO Site Procedure System, MS-1001, and RSO Document System, M-140 specify document control requirements applicable to the SDF.

Deficiency:

During the SSR for the Slurry Dewatering Facility, two document control issues were observed. The following items were found:

The SSR Team was provided a copy of procedure 43-C-360, "Baseline Valve Line-up for the AWWT Slurry Dewatering Facility," that was not the current revision found in the field. The SDF procedure record book and the AWWT procedure book contained revision 1 of 43-C-360 as did RSO Document Control Files. One controlled document holder had both Revision 0 and Revision 1 with the unsigned controlled copy receipt acknowledgement sheet attached. This is contrary to M-140, "RSO Document Control System," Step, 6.7.1 guidance.

The AWWT Procedure Book contained a copy of procedure D10-00-020, "RSO Division Document System" which was canceled on April 28, 1996 and replaced by M-140 and M-141. The new documents were not in the AWWT procedure book. The RSO Document Control System has no requirement for tracking returns of receipt acknowledgement sheets from controlled copy holders. As a result, there is no positive verification that controlled copies have been received.

Check One:

Observation ___ **Post-Start Finding** _X_ **Pre-Start Finding** ___

Team Member: J. G. Rowe	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: HS.3.7	Deficiency No: HS.3.7-1

Finding Designation: Post-Start __X___ Pre-Start _____

Action Plan:

Resolution:

Responsible Individual: _____ (Print Name) _____ (Signature) _____ (Date)

Corrective Action Completion

Certified By: (Performing Org.) _____ (Print Name) _____ (Signature) _____ (Date)

Verified By: (ORR Team Leader) (for pre-start only) _____ (Print Name) _____ (Signature) _____ (Date)

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: HS.5.1	Deficiency No: HS.5.1-1	Deficiency Date: 7/19/96

Requirement:

A program is defined and implemented to verify the adequate plans for operations testing in the SDF. The Startup Test Plan/Procedure defines the scope of required tests to verify the acceptability of systems and components required to support safe operations.

Deficiency:

The Integrated Construction Acceptance Testing (ICAT) development and review for the auger was insufficient in that it did not test the auger to travel its necessary vertical range as required for its intended use.

Check One:

Observation _X_ **Post-Start Finding** ___ **Pre-Start Finding** ___

Team Member: W. Previty	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: HS.5.2	Deficiency No: HS.5.2-1	Deficiency Date: 7/19/96

Requirement:

Startup tests establish the required conditions and compare performance against approved engineering design acceptance criteria that supports the approved safety basis. (MS-1001)

Deficiency:

Changes to the Integrated Construction Acceptance Testing (ICAT) were made by the design/build subcontractor without a formal approval process.

Check One:

Observation _X_ **Post-Start Finding** ___ **Pre-Start Finding** ___

Team Member: W. Previty	Team Leader: W. Previty

000101

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: HS.5.5	Deficiency No: HS.5.5-1	Deficiency Date: 7/17/96

Requirement:

Operator training is conducted to the extent possible during ICAT/SOT.

Deficiency:

The Startup Plan specified that operator training is conducted to the extent possible during ICAT/SOT. Supervisors and operators did not participate to any significant extent during ICAT/SOT. Limited "hands-on" training was provided during the conduct of the Training and Evaluation Standards (TESs).

Check One:

Observation _X_ **Post-Start Finding** ___ **Pre-Start Finding** ___

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: HS.6.1	Deficiency No: HS.6.1-1	Deficiency Date: 7/17/96

Requirement:

Process systems and components that are required for safe operations are fully tested with applicable surveillance requirements satisfied.

Deficiency:

The Quality Control verification of completed ICAT tests indicates that eight items have not been verified. The eight items include the following:

overhead door operation
magnet WMB lid lifting devices
pump capacity (51-B013-PMP)
pH indicator (51-0B021A-AIT)
pH indicator (51-0B021B-AIT)
flow meter (51-0B084-FE)
diatomaceous earth feed system, 807 (51-0B027)
caustic day tank system, 707 (51-B028-TNK)

Check One:

Observation ___ **Post-Start Finding** ___ **Pre-Start Finding** _X_

Team Member: J. G. Rowe	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: HS.6.1	Deficiency No: HS.6.1-1

Finding Designation: **Post-Start** _____ **Pre-Start** __X__

Action Plan:

Resolution:

Responsible Individual: _____ Print Name _____ Signature _____ Date

Corrective Action Completion

Certified By: (Performing Org.) _____ Print Name _____ Signature _____ Date

Verified By: (ORR Team Leader) (for pre-start only) _____ Print Name _____ Signature _____ Date

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: HS.6.1	Deficiency No: HS.6.1-2	Deficiency Date: 7/17/96

Requirement:

Process systems and components that are required for safe operations are fully tested with applicable surveillance requirements satisfied.

Deficiency:

The drum packaging system has not been tested to verify operability. Before starting this process, the system should be tested to demonstrate the following:

The hoppers are capable of containing the volume of waste produced from one filter press operation,

The fork truck is capable of lifting full hoppers to the height necessary to dump the filter cake into the drum filling hopper,

The hoppers can be operated when raised to the dumping position,

The drum filling station can be operated so as not to overfill the 55 gallon drums.

This system should be tested with surrogate material before this system is started.

Check One:

Observation ___ **Post-Start Finding** _X_ **Pre-Start Finding** ___

Team Member: J. G. Rowe	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: HS.6.1	Deficiency No: HS.6.1-2

Finding Designation: Post-Start __X___ Pre-Start _____

Action Plan:

Resolution:

Responsible Individual: _____ (Print Name) _____ (Signature) _____ (Date)

Corrective Action Completion

Certified By:
(Performing Org.) _____ (Print Name) _____ (Signature) _____ (Date)

Verified By:
(ORR Team Leader)
(for pre-start only) _____ (Print Name) _____ (Signature) _____ (Date)

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: HS.6.3	Deficiency No: HS.6.3-1	Deficiency Date: 7/18/96

Requirement:

Structures, systems and components (SSC's) are in satisfactory physical condition to support safe operations. (Slurry Dewatering Facility - FERMCO FSC-566, Section 15090).

Deficiency:

An elevated horizontal run of process piping between the AWWT Bldg. 51 and the Slurry Dewatering Facility is resting on the pipe supports with no clamps, U-bolts or other means of pipe attachment.

Check One:

Observation ___ **Post-Start Finding** ___ **Pre-Start Finding** X

Team Member: S. Kumar	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: HS.6.3	Deficiency No: HS.6.3-1

Finding Designation: Post-Start _____ Pre-Start __X___

Action Plan:

Resolution:

Responsible Individual: _____ (Print Name) _____ (Signature) _____ (Date)

Corrective Action Completion

Certified By:
(Performing Org.) _____ (Print Name) _____ (Signature) _____ (Date)

Verified By:
(ORR Team Leader)
(for pre-start only) _____ (Print Name) _____ (Signature) _____ (Date)

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: HS.6.3	Deficiency No: HS.6.3-2	Deficiency Date: 7/18/96

Requirement:

Structures, systems and components (SSC's) are in satisfactory physical condition to support safe operations. (Slurry Dewatering Facility - FERMCO FSC-566, Section 13205).

Deficiency::

Miscellaneous Slurry Tank 704 has one of the supporting legs (north leg) along with its base plate, twisted at an angle (rather than being at right angles to the shell). The as-built drawings do not reflect the actual orientation of the vertical leg nor were design change documents submitted to show axial orientation of the supporting leg.

Check One:

Observation ___ **Post-Start Finding** ___ **Pre-Start Finding** X

Team Member: S. Kumar	Team Leader: W. Previty

000109

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: HS.6.3	Deficiency No: HS.6.3-2

Finding Designation: **Post-Start** _____ **Pre-Start** __X__

Action Plan:

Resolution:

Responsible Individual: _____ (Print Name) _____ (Signature) _____ (Date)

Corrective Action Completion

Certified By: (Performing Org.) _____ (Print Name) _____ (Signature) _____ (Date)

Verified By: (ORR Team Leader) (for pre-start only) _____ (Print Name) _____ (Signature) _____ (Date)

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: PO.1.2	Deficiency No: PO.1.2-1	Deficiency Date: 7/17/96

Requirement:

A training, qualification, requalification, and continuing training program system is defined and implemented at the project level.

Deficiency:

The training and qualification program does not provide a separate qualification for supervisors. A supervisor completes the same qualification card as an operator.

Check One:

Observation X **Post-Start Finding** ___ **Pre-Start Finding** ___

Team Member: W. Previty	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: PO.4.2	Deficiency No: PO.4.2-1	Deficiency Date: 7/19/96

Requirement:

SDF personnel understand the conduct of operations policies and are effectively implementing the principles.

Deficiency:

Valve labeling in the SDF was not in full compliance with Site Procedure ED-12-4016 in that some valves installed in SDF utility systems are not labeled.

Additionally, valves labeled IA-30, IA-ZV-42, IA-29, IA-31, IA-32, TW-V-25 and IA-11 are not included in the SDF baseline valve lineup procedure. After the correction of labeling deficiencies, all valves should be included on the baseline valve lineup.

Check One:

Observation ___ **Post-Start Finding** ___ **Pre-Start Finding** X

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: PO.4.2	Deficiency No: PO.4.2-1

Finding Designation: Post-Start _____ Pre-Start __X__

Action Plan:

Resolution:

Responsible Individual: _____ Print Name _____ Signature _____ Date

Corrective Action Completion

Certified By: (Performing Org.) _____ Print Name _____ Signature _____ Date

Verified By: (ORR Team Leader) (for pre-start only) _____ Print Name _____ Signature _____ Date

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: PO.5.1	Deficiency No: PO.5.1-1	Deficiency Date: 7/17/96

Reference:

Shift manning levels to support operations are defined in project documentation. Technical Procedure 43-C-361 requires that the SDF Round Sheet be completed every shift by a trained operator. Standing Orders M-123 only requires a SDF operator when the filter is operating.

Deficiency:

The qualification/training requirements for the "trained" operator to complete a SDF Round Sheet are not specified. In that all crews did not have a qualified SDF operator, rounds could not be taken by a qualified operator with shifting crew assignments.

Check One:

Observation___ **Post-Start Finding** ___ **Pre-Start Finding** _X_

Team Member: T. Parmer	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: PO.5.1	Deficiency No: PO.5.1-1

Finding Designation: **Post-Start** _____ **Pre-Start** __X__

Action Plan:

Resolution:

Responsible Individual: _____ (Print Name) _____ (Signature) _____ (Date)

Corrective Action Completion

Certified By: (Performing Org.) _____ (Print Name) _____ (Signature) _____ (Date)

Verified By: (ORR Team Leader) (for pre-start only) _____ (Print Name) _____ (Signature) _____ (Date)

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: PO.6	Deficiency No: PO.6-1	Deficiency Date: 7/16/96

Reference:

The requirements identified in the health and safety controls are implemented and effective.

Deficiency:

Some safety controls were not implemented in accordance with CFR 1910.

- The monorail overhead crane above the filter press does not have the capacity clearly marked.
- The evaluated platform in the vicinity at Tank 705 does not have a safety chain installed at the top of the access ladder.

Check One:

Observation___ **Post-Start Finding** ___ **Pre-Start Finding** _X_

Team Member: M. Richardson	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: PO.6	Deficiency No: PO.6-1

Finding Designation: **Post-Start** _____ **Pre-Start** __X__

Action Plan:

Resolution:

Responsible Individual: _____ (Print Name) _____ (Signature) _____ (Date)

Corrective Action Completion

Certified By: (Performing Org.) _____ (Print Name) _____ (Signature) _____ (Date)

Verified By: (ORR Team Leader) (for pre-start only) _____ (Print Name) _____ (Signature) _____ (Date)

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: PO.9.1	Deficiency No: PO.9.1-1	Deficiency Date: 7/17/96

Requirement:

Management personnel responsible for operation of the SDF Project possess the management, supervisory, and technical skills required to ensure safe operation of the facility.

Deficiency:

Managers and technical support personnel have not completed the minimum training required in the training and qualification program (Advanced Waste Water Treatment Slurry Dewatering Facility Training and Qualification Program Description, TQP023100). Additionally, supervisory and management training as a result of deficiencies noted in the May 1995 DOE Assessment of the AWWT Facility has not been completed in accordance with the FERMCO Corrective Action Plan.

Check One:

Observation ___ **Post-Start Finding** _X_ **Pre-Start Finding** ___

Team Member: W. Previty	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: PO.9.1	Deficiency No: PO.9.1-1

Finding Designation: Post-Start __X__ Pre-Start _____

Action Plan:

Resolution:

Responsible Individual: _____ (Print Name) _____ (Signature) _____ (Date)

Corrective Action Completion

Certified By: (Performing Org.) _____ (Print Name) _____ (Signature) _____ (Date)

Verified By: (ORR Team Leader) (for pre-start only) _____ (Print Name) _____ (Signature) _____ (Date)

395

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: PP.1.1	Deficiency No: PP.1.1-1	Deficiency Date: 7/17/96

Requirement:

Procedures specify process requirements, commitments, and other operational/administrative limitations to ensure operation within safe bounds.

Deficiency: The following concerns were identified:

Procedure 43-C-357 instructs the supervisor to verify that analytical data for "miscellaneous slurries" is less than one percent U235, contains percent solids information, and indicates the pH of the material. This procedure does not identify all acceptance criteria (i.e.; VOCs) nor does it specify the acceptable ranges for percent solids or pH to be verified by the supervisor. During the review, the supervisor indicated that verbal authorization of the data was acceptable for receipt of waste slurries.

Procedure 43-C-357, Step 8.1, identifies a "Miscellaneous Batch Treatment Sheet" for providing the treatment instructions to the SDF supervisor. When asked how this batch sheet is generated, the answer was given that the process engineer generates the sheet. There is no procedure for this activity, and there is no traceability to analytical data used to document the acceptance of the slurry for dewatering.

The concern with the two issues listed above is that there is no documentation trail from the analytical results to the Environmental Compliance approval to the batch sheet. These documents should be traceable and the supervisor should have access to these documents when receiving waste slurries. Without specific acceptance criteria listed in the receiving procedure, the supervisor is at risk when accepting waste based on partial documentation.

Procedure 43-C-357, Steps 8.5, 8.6, and 8.7 refer the operator to procedure 43-C-356 for chemical make-up instructions. Procedure 43-C-356 does not contain make-up instructions for these chemicals, rather pre-mixed chemicals are used. The procedure should identify the mixture used and 43-C-357 should be revised to identify the chemical mixtures to be used.

Waste packaging instructions are insufficient in the SDF. Procedure 43-C-358 does not identify the weight limits or define WMB capacity (full) for loading WMBs. The packaging procedures (PT-007) which provides this information is not available in the SDF or AWWT procedure record book stations.

Check One:

Observation X **Post-Start Finding** ___ **Pre-Start Finding** ___

Team Member: J. G. Rowe	Team Leader: W. Previty

000120

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No:	Deficiency No:	Deficiency Date:
PP.1.3/PP.1.6	PP.1.3-1/PP.1.6-1	7/17/96

Requirement:

Procedures reflect the configuration described in the SA/ASA.

Deficiency:

The SA/ASA requires, as an operating goal, that the process area be maintained under negative pressure of at least 0.1 inch water, and that the control room operator will be stationed in an enclosed control room which has its own HVAC unit. With the HVAC units and the dust collector operating, all doors closed, no significant change in pressure was observed in the control room versus the process area, and the process area versus ambient pressure outside the SDF.

The potential exists that the control operator may not have adequate PPE in the event of airborne contamination in the SDF and also the potential that airborne contamination would not be contained in the SDF.

Check One:

Observation ___ **Post-Start Finding** __ **Pre-Start Finding** X

Team Member:	Team Leader:
T. Parmer	W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: PP.1.3/PP.1.6	Deficiency No: PP.1.3-1/PP.1.6-1

Finding Designation: Post-Start _____ Pre-Start __X___

Action Plan:

Resolution:

Responsible Individual: _____ (Print Name) _____ (Signature) _____ (Date)

Corrective Action Completion

Certified By: (Performing Org.) _____ (Print Name) _____ (Signature) _____ (Date)

Verified By: (ORR Team Leader) (for pre-start only) _____ (Print Name) _____ (Signature) _____ (Date)

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: SO.1.5.5	Deficiency No: SO.1.5.5-1	Deficiency Date: 7/18/96

Requirement:

The Quality Assurance program is effectively implemented through QA review and approval of operating and maintenance procedures and work activities. The Quality Assurance Job Specific Plan for the Slurry Dewatering Facility Project, 2505-QA-003, Revision 0, Section 10.2.

Deficiency:

The Quality Assurance team member has developed a surveillance schedule for the SDF but the schedule has not been finalized with surveillance due dates. A Calibration surveillance schedule also is developed but remains in draft form. Complete schedules with dates is required for this criteria.

Check One:

Observation ___ **Post-Start Finding** ___ **Pre-Start Finding** _X_

Team Member: J. G. Rowe	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: SO.1.5.5	Deficiency No: SO.1.5.5-1

Finding Designation: Post-Start _____ Pre-Start __X___

Action Plan:

Resolution:

Responsible Individual: _____ (Print Name) _____ (Signature) _____ (Date)

Corrective Action Completion

Certified By:
(Performing Org.) _____ (Print Name) _____ (Signature) _____ (Date)

Verified By:
(ORR Team Leader)
(for pre-start only) _____ (Print Name) _____ (Signature) _____ (Date)

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: SO.1.6.1	Deficiency No: SO.1.6.1-1	Deficiency Date: 7/17/96

Requirement:

The Waste Characterization program is clearly defined and documented, has well defined interfaces and responsibilities, and includes a well defined and adequate system for documenting characterization has been established.

Deficiency:

The SDF will follow the established FEMP Waste Characterization Plan (M-128) and the Prototype Sampling and Analysis Plan for Containerized Waste (PL-3048). A Material Evaluation Form which documents the characterization of the waste has been initiated but not completed. The MEF number for the material is 2810. The initial plan is to generate waste prior to characterization. This causes the following concerns:

Generating uncharacterized waste is not consistent with EW-0001, "Completing the Material Evaluation Form." There is a risk that waste will be generated that does not meet the disposal site waste acceptance criteria. Some process control sampling is suggested but not proceduralized. This process control sampling would verify percent moisture and percent Uranium but no sampling frequency or method is included in the procedures. Procedure 43-C-358, Step 8.3.2 directs operators to sample "...WMB as directed by the Supervisor."

Sampling for waste characterization should also include isotopic analysis. The procedure does not specify sampling for MC&A purposes. Procedure 43-C-358 does not specify isotopic composite sampling requirements. This will result in containers being assigned "factor assays" by MC&A which will require verification sampling prior to disposal.

Check One:

Observation ___ **Post-Start Finding** _X_ **Pre-Start Finding** ___

Team Member: J. G. Rowe	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: SO.1.6.1	Deficiency No: SO.1.6.1-1

Finding Designation: **Post-Start** ___X__ **Pre-Start** _____

Action Plan:

Resolution:

Responsible Individual: _____ Print Name _____ Signature _____ Date

Corrective Action Completion

Certified By: (Performing Org.) _____ Print Name _____ Signature _____ Date

Verified By: (ORR Team Leader) (for pre-start only) _____ Print Name _____ Signature _____ Date

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: SO.1.6.2	Deficiency No: SO.1.6.2-1	Deficiency Date: 7/17/96

Requirement:

DOE Order 5480.2A requires waste minimization efforts to be employed by generators of LLRW. Adequate procedures for systematic review and audit of the waste characterization program.

Deficiency:

During the SSR for the SDF, a concern for the efficiency of waste packaging from the press unloading operation was observed. Specifically, the filter press operation results in the waste container under the south end being filled approximately half full from one cycle while the box under the north end is filled three quarters full. The AWWT process engineer indicated that this was the packaging efficiency that was going to be maintained at least for the box under the north end because the SDF has not Motor Vehicle Operator assigned to that facility. To improve efficiency, the operation of the filter press would require a MVO to move full boxes and replace with empty boxes during the press unloading operation. The procedure 43-C-358 does not include packaging efficiency requirements. This will result in higher disposal cost for off site disposal because this cost is based on the outside volume of the box.

The WMBs filled during operability testing did not have current W-65 cards completed. This inventory control record requires the operator filling the container to document that the container was empty, void of rust or holes, and properly prepped prior to filling. The boxes in the facility had W-65 cards attached but neither was checked for the pre-filling criteria documentation.

Procedure 43-C-361, Step 8.6, identifies the requirements for using the portable scale for weighing waste containers. This section requires operators to use test weights to verify scale calibration. No test weights were available at the SDF and the Process Engineer and SDF Supervisor indicated some indecision as to if a test weight was going to be used. The weight of the waste is used in combination with the MC&A isotopic sampling to characterize the waste. Therefore, the weight of the container must be accurately determined to provide accurate isotopic quantification.

Check One:

Observation _X_ **Post-Start Finding** ___ **Pre-Start Finding** ___

Team Member: J. G. Rowe	Team Leader: W. Previty

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR DEFICIENCY FORM

CRA No: SO.1.6.3	Deficiency No: SO.1.6.3-1	Deficiency Date: 7/18/96

Requirement:

The Quality Assurance Job Specific Plan for the Slurry Dewatering Facility Project, 2505-QA-003, Revision 0, Section 5.2.3. Nevada Test Site Defense Waste Acceptance Criteria, Certification, and Transfer Requirements, NVO-325, Revision 1, Appendix C, Section 18.

Deficiency:

A Waste Certification Surveillance checklist has not been developed for the SDF waste generation operation. This surveillance is required by NVO-325, Revision 1, Appendix C. This document is identified as an applicable document by the Quality Assurance Job Specific Plan for the SDF Project, 2505-QA-003, Revision 0. The surveillances are important for certification of this waste for disposal at the Nevada Test Site.

Check One:

Observation ___ **Post-Start Finding** X **Pre-Start Finding** ___

Team Member: J. G. Rowe	Team Leader: W. Previty

ADVANCE WASTEWATER TREATMENT SLURRY DEWATERING FACILITY
SSR FINDING RESOLUTION FORM

CRA No: SO.1.6.3	Deficiency No: SO.1.6.3-1

Finding Designation: Post-Start __X__ Pre-Start _____

Action Plan:

Resolution:

Responsible Individual: _____ Print Name _____ Signature _____ Date

Corrective Action Completion

Certified By:
(Performing Org.) _____ Print Name _____ Signature _____ Date

Verified By:
(ORR Team Leader)
(for pre-start only) _____ Print Name _____ Signature _____ Date

FEMP STANDARD STARTUP REVIEW PLAN

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY

June 1996

SUBMITTED:	Everett Henry	6/12/96 Date
APPROVED:	David Capelle	6/12/96 Date
CONCURRENCE:	Marc Jewett	6/12/96 Date
	James Curry	6/14/96 Date

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT COMPANY
PO BOX 538704
CINCINNATI, OHIO 45253-8704

FEMP STANDARD STARTUP REVIEW PLAN
ADVANCED WASTE WATER TREATMENT
SLURRY DEWATERING FACILITY

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FEMP SSR PLAN: ADVANCED WASTE WATER TREATMENT SLURRY DEWATERING FACILITY	DOCUMENT NO: REVISION NO: 0
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1.0 INTRODUCTION

This Standard Startup Review(SSR)Plan, developed in accordance with Fernald Environmental Management Project (FEMP) QA-0013, *Standard Startup Reviews*[1], for the Aquifer Restoration Project at the U. S. Department of Energy's Fernald Site, is established for initial startup of the Advanced Wastewater Treatment (AWWT) Slurry Dewatering Facility(SDF). This plan defines the startup review and level of detail required to demonstrate readiness for operation has been achieved. An SSR Team will be used to complete the pre-operational readiness assessment.

The SDF will provide dedicated conditioning and dewatering of AWWT generated waste slurry of up to approximately 30,000 gallons per day. The SDF will also accommodate conditioning and dewatering of a limited quantity of miscellaneous waste slurry or sludge that may be transported to the SDF from other site activities. The SDF is intended to essentially replace the dewatering capability that has historically been performed by the existing Plant 8 Sump.

This plan supplements the pre-operational assessment information provided in the *Startup Plan for the Advanced Wastewater Treatment Slurry Dewatering System*[2] promulgated in February 1996. The Start-Up Plan discussed development of the SSR program which would be established in the revision to FEMP RM-0025, *Pre-Operational Assessment Program*[3]. The effective date of the SSR Program was March 28, 1996.

Additionally, this plan revises the *Startup Plan for the Advanced Wastewater Treatment Slurry Dewatering System*[2] with respect to the designated approval authority for the start-up of the project. The start-up authority for this project will be the Manager of the Department of Energy, Ohio Field Office (DOE-OH). The request for startup approval will be forwarded via the FERMCO Office of the President and the Department of Energy, Fernald Area Office (DOE-FN). Copies of the SSR Plan, and the SSR Implementation Plan and Final Report will be provided to DOE(FN). The SSR Plan and the SSR Implementation Plan will be approved by the SDF Project Manager and SSR Team Leader, respectively.

2.0 FACILITY DESCRIPTION

2.1 Building

The SDF will consist of a pre-engineered structure, a concrete pad supporting process tanks, a truck unloading area, and a white metal box (WMB) storage pad, all located on the Fernald site at the northwest side of Building 51 which houses the AWWT Facility. The SDF will be at least ten feet away from Building 51.

2.2 Equipment

The facility includes a 50,000 gallon slurry storage tank, a 10,000 gallon miscellaneous slurry feed tank, a 100 gallon caustic (NaOH) day tank, a 100 gallon sulfuric acid day tank, a three compartment conditioning tank for pH adjustment, coagulation and flocculation, an alum/ferric chloride day tank, a polymer drum, a thickener tank, a filter press, a body feed tank, a filter feed tank, a discharge tank, two WMB filling stations, a dust handling system with HEPA filters, and redundant pumps at each process step. The slurry storage tank, the thickener, the miscellaneous slurry tank, and the discharge tank will be located outside the facility in a diked area. A Control Room will enclose the operator at the work station and will include a system control panel and ventilation with outside air. The SDF controls can be monitored and operated at the AWWT control room.

2.3 Process

The AWWT SDF will accept slurry from the AWWT at up to 25,000 gallons/day with approximately 0.5-1.0% solids and from other miscellaneous sources at up to 6% solids. The purpose of the SDF is to reduce the volume of the slurry by removing water from the slurry using a sludge thickener tank and filter press. The SDF is intended to replace the dewatering capability that has been performed by the Plant 8 Sump.

One full time operator and a part time supervisor will be used. All necessary utilities and support systems will be obtained from Building 51. This includes process water, 100 psig compressed air, 20% sodium hydroxide, 93% sulfuric acid, potable water, drains, electrical power, waste slurry input tie-in, and a fire alarm and evacuation system.

3.0 STARTUP CLASSIFICATION

3.1 Description of Hazards

A Preliminary Hazards Analysis was performed to identify potential hazards to the worker and the public. The *AWWT Slurry Dewatering Facility Safety Assessment/Auditable Safety Analysis 94-0038*[4] evaluated the potential significance of the hazards associated with the facility and determined the hazard classification of the facility. Nuclear Criticality Safety (NCS) of the SDF will be ensured by process knowledge of the slurry source or sampling/analysis of slurry in the event of inadequate process knowledge. All other standard hazards will be controlled through implementation of FERMCO Occupational Safety and Health Programs.

The radiological inventory of the SDF is conservatively estimated at 623 pounds of uranium enriched at 1% or less U-235. Hazardous chemicals in the facility could include sulfuric acid, sodium hydroxide, alum, and ferric chloride. Sulfuric acid is the only hazardous chemical regulated.

By controlling the enriched U-235 mass entering the AWWT and the AWWT SDF facility to below 1.0%, any uranium concentration or mass may be processed and stored in the AWWT without the need for additional NCS controls or limits.

The AWWT SDF Safety Assessment/Auditable Safety Analysis (SA/ASA) classifies the SDF as a Radiological Facility. Maximum radioactive inventory in the SDF at any one time is below the Hazard Category 3 threshold.

Since the SDF is part of AWWT, the Unreviewed Safety Question Determination (USQD) Program established for AWWT must be implemented and SDF operations must comply with the parts of the AWWT Operational Safety Requirement applicable to the SDF. SDF Project Management will limit the amount and type of radiological and hazardous materials in the SDF by implementation of commitments specified in the SA/ASA and reinforcing in the standard operating procedures (SOP).

3.2 Designation of Startup Action

The AWWT SDF is designated as a new startup facility at the FEMP.
Hazard classification of the facility as previously discussed is less than Hazard Category 3.

4.0 PROPOSED BREADTH OF THE SSR ASSESSMENT

The breadth of the SSR is defined to assess the readiness of the AWWT Slurry Dewatering Facility for operations in the following functional areas:

- Hardware and System Readiness
- Personnel and Organizational Readiness
- Management Programs
- Procedures and Processes
- Support Organizations

The following objectives will be assessed:

4.1 Hardware and system readiness to commence operations has been achieved.

- Facility safety documentation is in place that describes the safety envelope of the facility.

- The safety documentation characterizes hazards and risks and identifies mitigating measures to protect workers and public safety from characterized hazards.

- Programs to control the design and modification of facilities and utility systems are in place.

- A program is in place to confirm and periodically reconfirm the condition and operability of safety related equipment, process systems and utility systems.
- An adequate startup program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators.
- Facility hardware, design, and documentation to support planned operations has been achieved.

4.2 Personnel and organizational readiness has been achieved.

- Training and qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed.
- The level of knowledge of the operations personnel is adequate based on reviews of examinations, results of examinations, selected interviews, and observation of work performance.
- Facility off-normal and emergency conditions have been identified and personnel are able to respond to those conditions.
- The implementation status for FERMCO site operations procedures is adequate for conduct of operations.
- There are sufficient number of qualified personnel to support safe operations.
- Personnel exhibit an awareness of worker safety, health, and environmental protection requirements.
- Modifications to the facility have been reviewed for potential impacts on training and qualifications.
- Operations personnel and shift supervisors have been properly trained and qualified in accordance with the latest revision of procedures.
- Technical and management qualifications of personnel responsible for facility operations are adequate.

4.3 Management programs have achieved a condition of readiness to support commencement of operations.

- A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, as well as site organizations.
- A systematic review of the facilities conformance to applicable DOE Orders has been performed. Non-conformances to applicable DOE Orders have been justified, schedules for gaining compliance have been justified in writing and formally approved.
- Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety.

4.4 Procedures and processes are in place to adequately support operations.

- There are adequate and correct procedures for operating systems and utility systems.
- A system is established to ensure procedures are kept current and accurate, including temporary changes to procedures.
- Modifications to the facility have been reviewed for potential impacts on procedures and procedures have been revised to reflect these modifications.

4.5 Support organizations are staffed, trained, and have programs which adequately support operations.

- Management programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure support services are adequate for operations, including radiological controls, safety and health, waste management programs, maintenance, and quality assurance.

5.0 SSR KEY EVENTS

5.1 Prerequisites

The following items will be completed prior to commencement of the SSR.

- Facilities and programs required to support the SSR objectives have been adequately addressed and implemented.

- FERMCO work permits are promulgated and Occupational Safety and Health has reviewed the SDF Operating and Maintenance Procedures.
- Safety Assessment is approved. Programs, procedures and administrative controls specified in Safety Assessment are complete and implemented.
- Systems, structures, and components required by the safety documentation or to support operations are installed, tested, and operable.
- All operating procedures for the SDF are current and approved.
- All operations personnel and operations support personnel are trained and qualified.
- A review of the SDF Project's conformance to selected Site Requirement Investigation Document (S/RID) requirements has been performed, any non-conformances have been identified, and schedules for gaining compliance have been justified in writing and formally approved.
- The SSR Plan is approved by the Project Manager.
- DOE-FN has been notified of the SSR via the Startup Notification Report.
- SSR Team Members are prepared to conduct the SSR.
- The SSR Implementation Plan is approved by the Team Leader.
- Project Director has certified readiness to operate.

5.2 Estimated Start Date and Duration

The SSR is estimated to commence on June 18, 1996. The SSR is scheduled to be completed in three days. The final report will be delivered as soon as possible after the completion of the SSR.

6.0 TEAM LEADER

The Team Leader will be William H. Previty. He is a senior project manager with over 30 years management, operations, and engineering experience in nuclear power and environmental remediation programs. He has supported operational readiness programs for the UNH Neutralization and the Vitrification Pilot Plant Projects and has served as team leader on two FERMCO Readiness Assessments. He has assisted in the development of FERMCO Pre-Operational Assessment Programs. He is employed by Coleman Research

Corporation and assigned to Remediation Support Operations Management Programs Department.

The Team Leader will select a team of individuals with technical expertise to assess functional areas including construction, engineering, operations, training, health and safety, waste programs, management and support programs.

7.0 OFFICIAL TO APPROVE STARTUP OF THE FACILITY

The start-up authority for this project will be the Manager of the Department of Energy, Ohio Field Office (DOE-OH).

8.0 REVIEWERS AND APPROVER

The following individuals Aquifer Restoration Project officials will review the SSR Plan:

Bruce Ledbetter	Startup and Turnover Engineer
Jack Hughes	Engineering Manager
David Capelle	Construction Manager/SDF Project Manager
Everett Henry	Operations Manager (SSR Plan Preparer)

Approver:

David Capelle	SDF Project Manager

Concurrence:

Marc Jewett	Project Director
James Curry	PQA Operational Readiness Organization

9.0 DISTRIBUTION

File Record Storage Copy
Dick Butterfield, MS 52-5
David Capelle, MS 52-5
James Curry, MS 43
Randall Gist, MS 45
Cathy Glassmeyer, MS 75
Everett Henry, MS 52-5
Jack Hughes, MS 52-5
Marc Jewett, MS 52-5
John Kappa, MS 45
Bruce Ledbetter, MS 16-3
William Previty, MS 70

10.0 REFERENCES

1. Fernald Environmental Management Project: *Site Procedure QA-0013, Standard Startup Reviews (SSR),* Revision 0, March 28,1996

2. Aquifer Restoration Project: *Startup Plan for the Advanced Wastewater Treatment Slurry Dewatering System,* February 1996

3. Fernald Environmental Management Project: *Site Procedure RM-0025, Pre-Operational Assessment (PA) Program,* Revision 4, March 28, 1996

4. Fernald Environmental Restoration Management Corporation: *AWWT Slurry Dewatering Facility Safety Assessment/Auditable Safety Analysis 94-0038,* Revision 1, April 15, 1996

Fernald Environmental
FERMCO
Restoration Management Corporation

INTEROFFICE MEMORANDUM

To:	Distribution	**Date:**	June 26, 1996
Location:	Various	**Reference:**	N/A
From:	Bill Previty, MS70	**FERMCO #:**	M:PQA(PA):96-0066
Location:	Fernald	**Client:**	DOE DE-AC24-92OR21972
Extension:	648-5130	**Subject:**	**STANDARD STARTUP REVIEW IMPLEMENTATION PLAN - ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY**

c: File Record Storage Copy 106.4.25.5
Dave Brettschneider, MS52-5, Fernald
Marc Jewett, MS52-5, Fernald

Attached is the Standard Startup Review Implementation Plan - Advanced Wastewater Treatment Slurry Dewatering Facility for disposition.

If you have any questions, please give me a call at extension 5130.

WHP:mam
Attachment

Distribution:

Dick Butterfield, MS52-5, Fernald
James Curry, MS43, Fernald
Cathy Glassmeyer, MS75, Fernald
Jack Hughes, MS52-5, Fernald
Bruce Ledbetter, MS16-3, Fernald
Marlon Richardson, MS31, Fernald
Tracy Parmer, MS67, Fernald
Melissa Miller, MS43, Fernald
David Capelle, MS52-5, Fernald
Randy Gist, MS45, DOE-FN
Everett Henry, MS52-5, Fernald
John Kappa, MS45, DOE-FN
Bill Previty, MS70, Fernald
Jeff Rowe, MS16-2, Fernald
Surinder Kumar, MS52-2, Fernald

FEMP STANDARD STARTUP REVIEW IMPLEMENTATION PLAN

ADVANCED WASTEWATER TREATMENT SLURRY DEWATERING FACILITY

JUNE 1996

APPROVED: _____ 6/26/96
William H. Previty
SSR Team Leader

Date

FERNALD ENVIRONMENTAL RESTORATION MANAGEMENT COMPANY
PO BOX 538704
CINCINNATI, OHIO 45253-8704

FEMP STANDARD STARTUP REVIEW IMPLEMENTATION PLAN
ADVANCED WASTE WATER TREATMENT
SLURRY DEWATERING FACILITY

TABLE OF CONTENTS

1.0 INTRODUCTION/BACKGROUND

1.1 INTRODUCTION

A Standard Startup Review (SSR) will be conducted, in accordance with FEMP RM-0025, *Pre-Operational Assessment Program*[1] to verify the operational readiness of the Aquifer Restoration Project at the U. S. Department of Energy's Fernald Site to start-up the Advanced Wastewater Treatment (AWWT) Slurry Dewatering Facility (SDF). The SDF will provide dedicated conditioning and dewatering of AWWT generated waste slurry up to 25,000 gallons per day and also to accommodate conditioning and dewatering of a limited quantity of miscellaneous waste slurry or sludge that may be transported to the SDS from other site activities.

The breadth of the SSR will be governed by the direction provided in the FEMP Standard Startup Review Plan, *Advanced Wastewater Treatment Slurry Dewatering Facility*[2].

1.2 FACILITY DESCRIPTION AND PROCESS

The Fernald Site is a government owned, contractor operated, former uranium processing facility located near Cincinnati, Ohio. The site was placed on the National Priorities List in 1989 and is currently undergoing remediation under the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) in accordance with the 1991 *Amended Consent Agreement* (ACA) between the DOE and the U. S. Environmental Protection Agency (EPA). The mission of the Fernald Site has now changed to environmental remediation.

1.2.1 Building

The SDF will consist of a pre-engineered structure, a concrete pad supporting process tanks, a truck unloading area, and a white metal box (WMB) storage pad, all located on the Fernald site at the northwest side of Building 51 which houses the AWWT Facility. The SDF will be at least ten feet away from Building 51.

1.2.2 Equipment

The facility includes a 50,000 gallon slurry storage tank, a 10,000 gallon miscellaneous slurry feed tank, a 100 gallon caustic (NaOH) day tank, a 100 gallon sulfuric acid day tank, a three compartment conditioning tank for pH adjustment, coagulation and flocculation, an alum/ferric chloride day tank, a polymer drum, a thickener tank, a filter press, a body feed tank, a filter feed tank, a discharge tank, two WMB filling stations, a dust handling system with HEPA filters, and redundant pumps at each process step. The slurry storage tank, the thickener, the miscellaneous slurry tank, and the discharge tank will be located outside the facility in a diked area. A Control Room will enclose the operator at the work station and will include a system control panel and ventilation with outside air.

1.2.3 Process

The AWWT SDF will accept slurry from the AWWT at up to 25,000 gallons/day with approximately 0.5-1.0% solids and from other miscellaneous sources at up to 6% solids. The purpose of the SDF is to reduce the volume of the slurry by removing water from the slurry using a sludge thickener tank and filter press. The SDF is intended to replace the dewatering capability that has been performed by the Plant 8 Sump.

One full time operator and a part time supervisor will be used. All necessary utilities and support systems will be obtained from Building 51. This includes process water, 100 psig compressed air, 20% sodium hydroxide, 93% sulfuric acid, potable water, drains, electrical power, waste slurry input tie-in, and a fire alarm and evacuation system.

1.3 DESCRIPTION OF HAZARDS

A Preliminary Hazards Analysis was performed to identify potential hazards to the worker and the public. The *AWWT Slurry Dewatering Facility Safety Assessment/Auditable Safety Analysis 94-0038*[9] evaluated the potential significance of the hazards associated with the facility and determined the hazard classification of the facility. Nuclear Criticality Safety (NCS) of the SDF will be ensured by process knowledge of the slurry source or sampling/analysis of slurry in the event of inadequate process knowledge. All other standard hazards will be controlled through implementation of FERMCO Occupational Safety and Health Programs.

The radiological inventory of the SDF is conservatively estimated at 623 pounds of uranium enriched at 1% or less U-235. Hazardous chemicals in the facility could include sulfuric acid, sodium hydroxide, alum, and ferric chloride. Sulfuric acid is the only hazardous chemical regulated.

By controlling the enriched U-235 mass entering the AWWT facility and the AWWT SDF facility to below 1.0%, any uranium concentration or mass may be processed and stored in the AWWT without the need for additional NCS controls or limits.

The AWWT SDF Safety Assessment/Auditable Safety Analysis (SA/ASA) classifies the SDF as a Radiological Facility. Maximum radioactive inventory in the SDF at any one time is below the Hazard Category 3 threshold.

Since the SDF is part of AWWT, the Unreviewed Safety Question Determination (USQD) Program established for AWWT must be implemented and SDF operations must comply with the parts of the AWWT Operational Safety Requirement applicable to the SDF. Project Management will limit the amount and type of radiological and hazardous materials in the SDF by implementation of commitments specified in the SA/ASA.

2.0 PURPOSE

The purpose of this Implementation Plan is to describe the process conducting the Fernald Environmental Restoration Management Corporation (FERMCO) SSR and the scope of the review. The SSR will verify the readiness to operate with respect to safety, health, environmental compliance, and management in accordance with the FEMP QA-0013, *Standard Startup Review (SSR)*[4].

3.0 SCOPE

3.1 ADMINISTRATIVE SCOPE

The scope of the SSR consists of verifying that the following objectives and sub objectives are addressed:

HS. Hardware and system readiness to commence operations has been achieved. (HS)

PO. Personnel and organization readiness to commence operations has been achieved. (PO)

MP. Management programs have achieved a condition of readiness to support commencement of operations. (MP)

PP. Procedures and processes are in place that adequately support operations. (PP)

SO. Support organizations are staffed, trained, and have programs which adequately support operations. (SO)

The verification of readiness to operate is accomplished by ensuring that OBJECTIVES and SUB-OBJECTIVES developed from the FEMP QA-0013, *Standard Startup Review (SSR)*[4] are addressed.

CRITERIA REVIEW AND APPROACHES (CRA's) are developed to define the depth of the review. The CRA's are developed to verify the OBJECTIVES and SUB-OBJECTIVES that support the review breadth defined in the FEMP Standard Startup Review Plan, *Advanced Wastewater Treatment Slurry Dewatering Facility*[2]. CRA's are included as Attachment 1.

The review will be generally limited to those activities and programs used to ensure environmental, safety, and health protection for the SDF Project. Credit may be taken for the results of recent audits, appraisals, and assessments including the Readiness Assessment of the AWWT if the scope of the review was adequate to ensure that the program can support operational readiness of the SDF.

3.2 FACILITY/SYSTEM BOUNDARIES

The physical scope of the SSR is limited to the SDF building, systems, equipment and procedures including the interface with the existing AWWT systems and facility. This scope is defined in FERMCO Memorandum, *PRE-OPERATIONAL ASSESSMENT OF ADVANCED WASTEWATER TREATMENT (AWWT) SLURRY DEWATERING FACILITY*[6].

4.0 SSR PREREQUISITES

The following prerequisites are to be completed prior to commencing the SSR:

- The SSR Plan has been approved by the Project Director and the Manager, Performance/Operations QA.
- The DOE has been notified of the SSR via a Startup Notification Report.
- FERMCO SSR team members are selected and trained.
- The FERMCO SSR Implementation Plan is approved by the Team Leader.
- FERMCO Line Management has certified that the project is ready for operations.

5.0 OVERALL APPROACH

The SSR will provide FERMCO senior management with independent, objective evidence of the readiness to commence SDF Project operations. The following paragraphs provide a general outline of the readiness review process as defined in FEMP RM-0025, *Pre-Operational Assessment Program*[1].

Using the process described in RM-0025, the performing organization determines whether an SSR is required and notifies the Pre-Operational Readiness Program Administrator of the need for a SSR. A SSR Plan is developed and approved. A Startup Notification Report is provided to the DOE.

The SSR Team Leader and Team Members are selected and trained. The SSR Team develops the SSR Implementation Plan and CRA's based on the SSR breadth defined in the SSR Plan and the depth necessary to verify operational readiness for the facility as discussed in Section 7.0.

The performing organization notifies the SSR Team Leader that the project is ready for operations and required prerequisites have been completed.

The SSR is conducted by Team Members using the CRA's as the basis for the review. The SSR is intended to be a performance-based review with the emphasis being placed on performance adequacy rather than a systematic review of program structure and organization. If review indicates a weak program then further analysis of the program will be conducted. An SSR Appraisal Form, Attachment 2, will be completed to document the review actions taken to satisfy each CRA. An SSR Deficiency Form, Attachment 2, will be completed for each observation/finding identified during the review.

The Team Leader and Team Members will make the determination of whether a deficiency is an observation, post-start finding, or pre-start finding. Attachment 3 provides the criteria to be used to aid in this determination. The results of this determination are documented on the SSR Deficiency Form. The Performing Organization resolves pre-start findings and documents the resolution on an SSR Finding Resolution Form, Attachment 2. This form is also used to specify action plans for resolution of post-start findings.

At the completion of the SSR, the SSR Final Report will be prepared summarizing the review and deficiencies identified during the SSR. The Team Leader will sign the final report and transmit it to the President, FERMCO. The SSR Final Report will be the basis for determining the operational readiness of the facility. A Readiness to Proceed Memorandum is sent to the DOE when the President, FERMCO determines that operational readiness has been achieved.

6.0 SSR PREPARATIONS

Prior to commencement of SSR activities, training of SSR members will be conducted and will consist of facility familiarization, necessary radiological and safety training for site and facility access, and familiarization with the SSR process. The SSR Team Leader is responsible for ensuring that required training for Team Members has been completed and qualifications have been documented. Attachment 4 provides a summary of team member qualifications and training.

7.0 SSR PROCESS

The SSR OBJECTIVES were developed from the assessment objectives listed in requirements provided in FEMP RM-0025, *Pre-Operational Assessment Program*[1]. The SSR OBJECTIVES and SUB-OBJECTIVES are described in Section 3.0.

CRA's are developed from the OBJECTIVES and SUB-OBJECTIVES to establish the review criteria and methodology that define the depth of the SSR. Each criteria has a corresponding review approach. The CRA's are developed by SSR Team Members utilizing the members' expertise; the requirements specified in the Aquifer Restoration Project, *Startup Plan for the Advanced Wastewater Treatment Slurry Dewatering Facility*[6]; the potential hazards of SDF operations; and the findings of internal and external review

groups. The review approaches include plans for reviewing procedures and programs; auditing records; interviewing personnel; inspecting equipment and facilities; and observing operations, and training. Selected team members may also observe startup testing activities and "dry runs" prior to the performing organization declaring that they are ready to operate. The CRA's for the SSR are included as Attachment 1.

8.0 ADMINISTRATION

During the SSR, the SSR Team Leader is responsible for managing the review process and serving as the FERMCO and DOE point-of-contact for information regarding the SSR. The Team Leader is responsible for ensuring that the scope of the review, as defined by this Implementation Plan, is being addressed by the reviewers and that the reviews are properly documented.

To facilitate team coordination and the exchange of information, the SSR Team will meet as necessary during the review. These meetings will permit team members to discuss significant observations of problems identified during the day and will permit the Team Leader to identify any trends or areas where more detailed information may be required. It will also allow potential schedule difficulties or possible information gaps to be flagged in time to take corrective actions.

SSR reporting requirements are specified in Section 9.0. The SSR final report will be prepared in accordance with FEMP QA-0013, *Standard Startup Review (SSR)*. SSR Team Members are free to issue a dissenting opinion on the final report. This independence, coupled with the professional experience of the participants, assures an objective and comprehensive review which will provide senior management with confidence that key findings are presented in an objective and responsible manner.

9.0 REPORTING AND RESOLUTIONS

9.1 SSR FORMS

During the conduct of the SSR, documentation of review findings and the assembly of objective evidence of operational readiness is the responsibility of the individual Team Members. Three administrative forms are used to document review activities, deficiencies and resolutions. Sample forms are included in Attachment 2.

The SSR Appraisal Form is used to document the review methods and actions taken by a Team Member during the evaluation process. Each SSR Assessment Form is cross referenced to a specific CRA number. The CRA number is the objective or sub-objective number followed by the sequential number of the criteria/approach listed under the objective/sub-objective (e.g., SO.1.1.1 is the CRA number for the first criteria/approach listed under sub-objective SO.1.1). The Team Member completes the form during the

evaluation process to document specific actions taken to evaluate the criteria specified in the CRA. The form must be completed with enough information to allow an outside agency reviewing the form to evaluate the completeness of the review. It is important that the write up clearly describes the approach taken to review each criterion and the results of the review. If for some reason the approach used does not exactly match the approach described in the CRA, the reason for the deviation is documented on the form.

The SSR Deficiency Form is used to document observations and findings identified during the criteria evaluation process. A separate SSR Finding Form is generated for each issue related to a particular CRA. As an example, while performing a review based on a CRA, a Team Member will generate a single SSR Appraisal Form which describes the methods utilized in the review and the results. If three distinct deficiencies are identified, the team member would then generate three SSR Deficiency Forms to detail the deficiencies. A single SSR Deficiency Form may be used to identify a generic problem for which a number of individual examples are listed. Each Deficiency Form is cross-referenced to the CRA number and assigned a unique deficiency number using a dash (-) followed by a numerical sequence number (1, 2, 3,...) that is based on the number of deficiencies written for that particular CRA (e.g, SO.1.1.1-1 would be the first deficiency number for CRA SO.1.1.1).

The SSR Finding Resolution Form is utilized by the Performing Organization to document action plans and resolutions for findings. A SSR Finding Resolution Form is developed for each finding. The form also provides a method to document the finding closure and verification of closure by the Team Leader, if required. The Team Leader is only required to verify the closure of pre-start findings.

9.2 CLASSIFICATION OF OBSERVATIONS AND FINDINGS

The Team Leader, in consultation with the applicable Team Members, determines whether an issue is an observation, post-start finding, or pre-start finding. An observation is a condition that, if corrected, would lead to operational excellence. Attachment 3 provides the criteria to be used in determining whether a finding is post-start or pre-start. The results of this determination are documented on the appropriate SSR Appraisal Form and SSR Deficiency Form.

9.3 FINDING RESOLUTION

The performing organization is responsible for closing pre-start findings prior to commencing operations. The SSR Team Leader is responsible for verifying closure of pre-start findings, in conjunction with the members.

9.4 LESSONS LEARNED

The Team Leader will determine whether any problems or successes can be documented as Lessons Learned to aid future SSR's and will incorporate them into the final report.

9.5 FINAL REPORT

The Team Leader will develop a report to document the results of the SSR and the process used to evaluate the readiness of the facility. The report will identify any deficiencies found in the review and will document whether they are observations, post-start findings, or pre-start findings.

Team members will be asked to concur in the SSR Final Report in the areas of their expertise. Dissenting opinions that have not been resolved will be appropriately addressed in the report. The SSR Final Report will be transmitted by the Team Leader to the President FERMCO. The Final Report will be the basis for FERMCO to determine the operational readiness of the facility and for issuing a Readiness to Proceed letter to the DOE.

10.0 SCHEDULE

ACTIVITY	DATE
Team Leader Identify SSR Team Members	4/15/96
Team Leader Complete Project Briefing and Training	5/01/96
Performing Organization Certifies Readiness to Operate	TBD
Start SSR Field Review	TBD
Complete SSR Field Review	TBD
Issue SSR Final Report	TBD

11.0 REFERENCES

1. Fernald Environmental Project: *Site Procedure RM-0025, Pre-Operational Assessment (PA) Program,* Revision 4, March 28, 1996.

2. Fernald Environmental Project Standard Startup Review Plan, *Advanced Wastewater Treatment Slurry Dewatering Facility,* June 1996.

3. Fernald Environmental restoration Management Corporation: *AWWT Slurry Dewatering Facility Safety Assessment/Auditable Safety Analysis 94-0038,* Revision 2, June 10, 1996.

4. Fernald Environmental Management Project: *Site Procedure QA-0013, Standard Startup Reviews (SSR),* Revision 0, March 28,1996.

5. FERMCO Memorandum, M:CRU5:96-0021 dated February 16, 1996, *PRE-OPERATIONAL ASSESSMENT OF ADVANCED WASTE WATER TREATMENT (AWWT) SLURRY DEWATERING FACILITY (SDF).*

6. Aquifer Restoration Project: *Startup Plan for the Advanced Wastewater Treatment Slurry Dewatering System,* February 1996.

ATTACHMENTS

Attachment 1: SSR Criteria and Review Approaches

Attachment 2: Sample SSR Forms

Attachment 3: Pre-Start/Post Start Finding Classification Criteria

Attachment 4: SSR Team Members Qualifications

ATTACHMENT 1

SSR CRITERIA AND REVIEW APPROACHES (CRA's)

CRA CATEGORIES:

HS. Hardware and system readiness to commence operations has been achieved. (HS)

PO. Personnel and organization readiness to commence operations has been achieved. (PO)

MP. Management programs have achieved a condition of readiness to support commencement of operations. (MP)

PP. Procedures and processes are in place that adequately support operations. (PP)

SO. Support organizations are staffed, trained, and have programs which adequately support operations. (SO)

The review approach of each will consist of the following:

- Document Review/Review of Document Control System
- Review Specification
- Review of Drawings
- Walkdowns/Exercises
- Review of Records
- Interviews
- Review of Previous Assessments

Hardware and system readiness to commence operations has been achieved.

Objective

HS.1 **Facility safety documentation is in place that describes the safety envelope of the facility.**

Criteria

1. The SA/ASA and associated safety documentation have been reviewed and approved by appropriate organizations.

2. Hazards are characterized and preventive/mitigating measures are identified for the SDF. These measures and other commitments defined in the SA/ASA for protection of worker, public, and the environment are implemented and effective.

Approach

1. Review the SA/ASA and ensure that the documents have been reviewed/approved as required.

2. Review the commitments and mitigating measures contained in the SA/ASA and verify that commitments and programs have been defined and effectively implemented.

3. Review operating procedures to verify the include safety related warnings and cautions.

4. Verify that safety requirements specified in at least one operating procedure are fully implemented by performing walkdowns and by reviewing records.

Objective

HS.2 **The safety documentation characterizes hazards and risks and identifies mitigating measures to protect workers and public safety from characterized hazards.**

Criteria

1. The health and safety controls are written, reviewed, ad approved in accordance with FERMCO requirements.

2. Hazards have been identified and mitigators/controls have been specified.

Approach

1. Review the project health and safety controls and verify that it is written, reviewed and approved in accordance with FERMCO requirements.

2. Review the project health and safety controls to verify that it evaluates the hazards and specifies appropriate controls and mitigators.

3. Sample work packages and operating procedures to verify the mitigators and controls defined in the health and safety controls are implemented.

Objective

HS.3 **Programs to control the design and modification of facilities and utility systems are in place.**

Criteria

1. Facility design conforms with applicable codes (e.g., fire, electrical, toxic chemical, etc.).

2. Design reviews are complete and documented. Non-conformances have been identified and schedules for gaining compliance have been formally approved.

3. Installed vessels, piping, instrumentation, and other facility hardware are compatible with process parameters (flow rates, pressure, temperature, chemicals). Storage tanks and pressure systems have been tested.

4. Latest drawings have been approved and distributed.

5. Equipment configuration agrees with as-built drawing, or exceptions noted on latest drawings.

6. Appropriate review and acceptance of plant modifications made after CFC are complete.

7. Uncontrolled drawings, manuals, and procedures are not used to perform work.

8. Procedures, policies, engineering drawings, and equipment manuals are maintained and are up-to-date.

9. Systems, structures and components are consistent with those described in the SA/ASA.

Approach

1. Walkdown selected process systems that are defined in the SA/ASA to verify that the systems and components are consistent with those described in the SA/ASA.

2. Select typical drawings and procedures for review and track the control process to and from the users to the document control program.

3. Review a typical modification and track it through the control process from the design build to modification completion stage. Verify that it was reviewed to ensure all due safety considerations were included, proper safety analysis was performed, design control was maintained, and documentation of the entire process was appropriate.

4. Observe work in progress to verify that only controlled drawings, procedures, and manuals are used to control work.

Objective

HS.4 **A program is in place to confirm and periodically reconfirm the condition and operability of equipment, process systems and utility systems.**

Criteria

1. Preventive maintenance programs and surveillance requirements are established for process systems and components that are required for safe operations.

2. Maintenance activities have all documentation and equipment necessary to maintain all new equipment, systems, process changes or new installations.

Approach

1. Review documentation to support the determination of system operability and applicable surveillance requirements for components or systems required for safe operations.

2. Review instrument calibration documentation for instrumentation loops to verify that documentation is in accordance with applicable procedures.

3. Review maintenance activity holdings to verify that equipment and documentation is on hand to support maintenance of installed equipment and systems in the SDF.

Objective

HS.5 **An adequate startup program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators.**

Criteria:

1. A program is defined and implemented to verify the adequate plans for operations testing in the SDF. The startup test plan/procedure defines the scope of required tests to verify the acceptability of systems and components required to support safe operations.

2. Start-up tests establish the required conditions and compare performance against approved engineering design acceptance criteria that supports the approved safety basis.

3. Required testing is complete with all test deficiencies evaluated and dispositioned.

4. SDF operating procedures are verified to the extent possible during Integrated Construction Acceptance Testing/System Operability Testing (ICAT/SOT).

5. Operator training is conducted to the extent possible during ICAT/SOT.

Approach

1. Review the Startup Test Plan/Procedure and associate documents to verify that a program is defined to verify the adequacy of equipment required to support safe operations. Verify that the plan/procedure defines the testing required to verify the acceptability of systems and components required to support safe operations.

2. Verify that the test procedure adequately tests the equipment functions and provides approved acceptance criteria that is consistent with safety basis documents.

3. Review the startup test plan against completed test documentation for the SDF project to verify that the operability of systems required to support safe operations was verified. Review completed test documentation to verify that deficiencies have been resolved with required re-tests completed.

4. Review the ICAT/SOT procedures to determine the extent the operating procedures were verified and operator training conducted during the startup test program.

Objective

HS.6 **Facility hardware, design, and documentation to support planned operations has been achieved.**

Criteria

1. Process systems and components that are required for safe operations are fully tested with applicable surveillance requirements satisfied.

2. Instrument calibrations are within current calibration periods and documented as required by applicable procedures.

3. Structures, systems and components (SSC's) are in satisfactory physical condition to support safe operations.

4. SSC's required for safe operations are turned over to the operating organization with required punch list items completed.

Approach

1. Review documentation to support the determination of system operability and applicable surveillance requirements for components or systems required for safe operations.

2. Review instrument calibration documentation for instrumentation loops to verify that documentation is in accordance with applicable procedures.

3. Walkdown process systems to verify that the systems are in satisfactory physical condition to support safe operations.

4. Review construction and system operational testing turnover documents to verify punch list items are closed.

Personnel and organizational readiness has been achieved.

Objective

PO.1 **Training and qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed.**

Criteria

1. The organizational structures for training and qualification and requalification programs are well defined and understood, including the responsibilities of all RSO personnel involved in managing, supervising, and implementing training.

2. A training, qualification, requalification, and continuing training system is defined and implemented at the project level.

3. Training and retraining schedules are maintained to keep all operations support services personnel qualified/certified.

Approach

1. Review the SDF Training and Qualification Program Plan and the organizational structure of the training department and its relationship to the SDF management structure.

2. Interview individuals involved in implementing training and qualification and requalfication programs and RSO/SDF personnel in order to determine if training has been realistic and effective.

3. Interview supervisors to determine how they ensure that their personnel maintain needed qualifications.

Objective

PO.2 **The level of knowledge of the operations personnel is adequate based on reviews of examinations, results of examinations, selected interviews, and observation of work performance.**

Criteria

1. Training and testing materials address technical fundamentals relevant to SDF operations.

2. Operations personnel have successfully completed required fundamentals training related to their responsibilities for SDF and supporting operations.

3. Operations personnel have an adequate understanding of technical fundamentals related to their responsibilities for SDF operations and supporting operations.

4. The training program includes training which emphasizes procedure compliance, and includes instruction in administrative controls for making

and receiving proper authorization for needed procedure changes.

Approach

1. Review training materials and testing methods to assess their technical accuracy and comprehensiveness. Review testing methods to verify that they adequately reflect training content and test for an understanding of technical fundamentals.

2. Review the training records of operations personnel to verify that required training was satisfactorily completed.

3. Interview operations personnel to assess the relevance of training to their jobs, verify that training material is appropriate to the educational level of operations personnel and verify that they have an adequate understanding of technical fundamentals.

4. Operations are to be observed, in order to determine the qualification level of personnel. Familiarity with operating procedures will be emphasized.

Objective

PO.3 **Facility off-normal and emergency conditions have been identified and personnel are able to respond to those conditions.**

Criteria

1. The SDF Project has adequately defined the project off-normal and emergency response requirements, organization and interfaces between the project and the site emergency response organization.

2. Procedures, facilities, equipment, and resources are in place and implemented to respond to off-normal and emergency events as required.

3. A drill and records program is established to validate emergency procedures and to augment/verify training.

Approach

1. Review program documentation and procedures to verify the following:

   - Off-normal and emergency procedures are in place as required by safety basis documents.

   - Procedures provide a direct and adequate link to site emergency

response procedures.

- Procedures clearly define roles and responsibilities.

2. Observe an off-normal or emergency drill.

3. Review the program records for the SDF drill program to ensure they are complete and adequate.

Objective

PO.4 **The implementation status for FERMCO site operations procedures is adequate for conduct of operations.**

Criteria

1. Project Manager's Standing Orders for the SDF are established to incorporate the principles taken from site operations procedures.

2. SDF personnel understand the conduct of operations policies and are effectively implementing the principles.

3. SDF personnel are applying the principles of conduct of operations in their daily activities.

4. Supervisors and managers are trained regarding policies and procedures for ensuring procedural compliance.

Approach

1. Review the Project Manager's Standing Orders.

2. Interview operators and supervisors to assess their understanding of the conduct of operations principles as they apply in the performance of their duties. Determine the extent of their understanding of procedural compliance policies.

3. Via interviews and observations, determine if personnel are effectively implementing the conduct of operations requirements during routine and abnormal events.

Objective

PO.5 **There are sufficient numbers of qualified personnel to support safe operations.**

Criteria

1. Shift manning levels to support operations are defined in project documentation.

2. Sufficient numbers of supervisors and operators are qualified to meet the project manning levels for operations.

Approach

1. Review project documentation to verify that shift manning levels for operators and supervisors are defined.

2. Review project qualification records to verify that sufficient numbers of supervisors and operators are qualified to conduct operations.

Objective

PO.6 **Personnel exhibit an awareness of worker safety, health and environmental protection requirements.**

Criteria

1. The requirements identified in the health and safety controls are implemented and effective.

Approach

1. Interview operations or maintenance workers and supervisor(s) to ensure that they are knowledgeable of specific aspects of the project health and safety controls.

2. Conduct walkdowns or observe operations including maintenance, repairs, and testing to ensure personnel are complying with safety requirements, procedural requirements and work permits.

Objective

PO.7 **Modifications to the facility have been reviewed for potential impacts on training and qualifications.**

Criteria

1. A systematic administrative program is defined and implemented to ensure that modifications to systems are reviewed for potential impacts on training

and qualifications and are reflected in revised training and qualification documents.

Approach

1. Review the program for facility modifications to verify that changes to systems, structures, and components are evaluated for training impact, and that the process requires training to be completed prior to operation of the system.

Objective

PO.8 **Operations personnel and shift supervisors have been properly trained and qualified in accordance with the latest revision to procedures.**

Criteria

1. Training and qualification programs for operators and supervisors are based on the latest revisions of procedures.

2. Adequate training and qualification have been completed and documented for procedures performed by operations personnel, supervisors and management as appropriate.

3. Effectiveness of training is demonstrated by operations personnel and supervisors.

Approach

1. Obtain a list of the most recently approved SDF Project procedures (operating, emergency response, etc..). Verify that the most recent procedural revisions are being used in training and qualification programs.

2. Review training records for operators and supervisors to verify that their training and qualifications are based on the most recent procedural revisions.

3. Interview operations personnel and supervisors and observe their work activities to evaluate the effectiveness of training.

Objective

PO.9 **Technical and management qualifications of personnel responsible for facility operations are adequate.**

Criteria

1. Management personnel responsible for operation of the SDF Project possess the management, supervisory, and technical skills required to ensure safe operation of the facility.

Approach

1. Review the qualification records for facility management personnel to ensure that managers responsible for operations are formally qualified and possess the training, education, and experience required for the position.

2. Interview personnel as required.

Management programs have achieved a condition of readiness to support commencement of operations.

Objective

MP.1 **A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, as well as site organizations.**

Criteria

1. Administrative procedures exist which establish a system for identifying, documenting and reviewing deficiencies resulting from internal and external audits and appraisals of SDF activities.

2. The corrective action procedures and policies, that are used at the facility, are current, up-to-date and implemented into the workforce.

3. A process is developed for ensuring implementation schedules for corrective actions necessary to resolve post start findings generated by the SSR is in place.

Approach

1. Review the results of the Readiness Assessment Final Report and the Type "B" Investigation for the Advanced Waste Water Treatment Facility.

2. Select a sample of SDF related CARs (all SDF related CARs should either be closed or properly dispositioned) to assure items have been identified, reviewed, and documented in the program.

3. Interview the manager and key personnel of the process to assess his/her plans for scheduling and eventually resolving SSR issues. Assess the ability and willingness of RSO management to meet the plans discussed or developed.

4. Obtain copies of all closure documentation. Also obtain all correspondence dealing with these findings that may have impact on the closure philosophy. Interview personnel involved as required. Make a determination whether closure is adequate to meet intent of findings and if required, has been accepted by the originators.

5. Ensure lessons learned has been identified and transmitted throughout the affected organizations.

Objective

MP.2 **A systematic review of the facilities conformance to applicable DOE Orders has been performed. Non-conformances to applicable DOE Orders have been justified, schedules for gaining compliance have been justified in writing and formally approved.**

Criteria

1. A program or system has been established and implemented to identify applicable DOE Orders and other requirements. This program or system helps to maintain facility conformance as new or revised requirements are received.

2. Compliance assessments are necessary for all programs, whether site, RSO, or SDF project specific in order to determine the projects level of compliance.

3. Deviations from the orders and regulations have been identified and corrective actions are identified and approved by management.

Approach

1. Ensure the SDF Project Team has identified the applicable requirements, programs and procedures necessary to properly operate and complete the SDF project. The SDF effort should be based on requirements taken from the SDF management/startup plan.

   Review program documentation to ensure that a process is established and implemented to maintain conformance as new or revised requirements are issued.

Interview the group leader responsible for this effort to determine the logic and approach used. Spot check the requirements for adequacy.

2. Review the programs (QA Audit, Self-Assessments, etc..) established for determining compliance to items identified in approach 1. Ensure the compliance assessment processes look top down including performance base measurement as required.

   Select random compliance assessments. Interview the responsible personnel who performed the assessments to determine consistency of reviews.

3. Review the process for compiling the open items and the method for determining impact on the SDF Project.

   Review the corrective actions of the packages in approach 2 above and ensure deviations that affect the SDF project have adequate corrective actions and are scheduled for completion in a time frame consistent with the project need.

Reference

DOE Order 6430.1A, General Design Criteria

Objective

MP.3 **Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety.**

Criteria

1. Policies exist defining the responsibility, authority, and accountability from the top level of management to the operating shift supervisors.

2. Functional responsibility and interfaces for the SDF Project are clearly understood by personnel.

3. The line organization are not overburdened by excessive duties or significant duties unrelated to the day-to-day RSO activities.

Approach

1. Review organization policy, the organizational chart and resulting position descriptions for selected management positions within the SDF project to

determine clarity of responsibility, accountability, and authority.

2. Interview non-management and management personnel from the project management chain to determine:

   - Knowledge of responsibilities
   - Sources of information concerning operations
   - Sources of direction
   - Clarity of responsibilities, authority, and accountability between RSO and the other interfacing organizations
   - Whether collateral duties impact their ability to carry out their basic job function.

Procedures and processes are in place to adequately support operations.

PP.1 **There are adequate and correct procedures for operating systems and utility systems.**

Criteria

1. Procedures specify process requirements, commitments, and other operational/administrative limitations to ensure operation within safe bounds.

2. Procedures are technically correct, consistent, and written to the required level of detail to ensure safe operation and to allow strict procedural compliance. When appropriate, the sequence for conducting operations and plant equipment line-ups is specified.

3. Procedures reflect the configuration described in the SA/ASA.

4. Operating procedures reflect the current configuration of systems important to the SDF Project.

5. Technical details are correct and consistent between procedures, drawings, system descriptions, etc.

6. Procedures address normal, off-normal, and emergency events in accordance with SA/ASA and other safety basis commitments.

7. Emergency and off-normal operating procedures effectively guide the operations staff in responding to events.

8. An adequate policy governing the use of procedures is defined and implemented and provides designated authority to deviate from written procedures during an emergency, if necessary, to protect personnel and

2. An adequate program is defined and implemented to ensure that changes to the AWWT FSAR and the SDF SA/ASA process requirements and commitments are reflected in procedures.

3. Controls are defined and implemented to ensure that only current and accurate procedures are available for distribution and use by plant personnel, including their use in training programs.

Approach

1. Review the procedural control program to verify that a process exists to evaluate, approve and control temporary changes to procedures.

   Interview operators to assess whether they understand the procedure control system and can describe how they know whether a temporary procedure/change is valid.

2. Review the safety basis management/change processes to verify that the process defines requirements to evaluate the impact of safety basis changes on procedures and requires the procedures to be changed/revised prior to implementing the change to the safety basis document.

   Review the USQ log for selected procedures and determine if the determination for the change contains the appropriate references to the AWWT SAR, SDF SA/ASA and other safety basis documents.

3. Review procedure(s) describing document control to verify adequate controls are established over procedures used for work by plant personnel.

Objective

PP.3 **Modifications to the facility have been reviewed for potential impacts on procedures and procedures have been revised to reflect these modifications.**

Criteria

1. A systematic administrative program is defined and implemented to ensure that modifications to systems are adequately reflected in revised operations and maintenance procedures.

Approach

1. Review the program for facility modifications to verify that changes to systems, structures, and components are evaluated for procedure impact and that the process requires procedures to be updated prior to releasing the

equipment or to maintain a safe condition.

Approach

1. Review operations procedures to ensure they specify process requirements, commitments, and other operational/administrative limitations described in the SA/ASA.

2. Review operations procedures to verify they are technically correct and to the required level of detail to ensure safe operation and to support procedural compliance.

3. Obtain procedures which direct equipment/system line-ups and operations. Discuss the procedure contents with an operator who normally performs the steps of the procedure, and "walkdown" the procedure with the operator. Confirm the operator's understanding of the procedure steps and the procedure's accuracy in describing equipment and system operation.

4. Review drawings, system descriptions, and procedures) which describe systems important to safe operations and verify that nomenclature and identification systems used are consistent.

5. Review the scope of written operations procedures against safety basis documents to ensure that approved procedures cover the range of required normal, abnormal, and emergency operations.

6. Obtain operations, maintenance, ES&H, or administrative procedures that deal with abnormal events and assess if they adequately address the events and guide the operating staff to the proper responses.

7. Review and assess administrative guidance of operating, maintenance, and administrative procedures to change procedures in an emergency in order to maintain a safe configuration.

Objective

PP.2 **A system is established to ensure procedures are kept current and accurate, including temporary changes to procedures.**

Criteria

1. A program is defined and implemented that provides for evaluation and approval of temporary changes and timely removal of the changes when the purpose is superseded.

modification for operation.

Review operation procedures important to safe operations that have been modified and walkdown each procedure to determine if the procedure accurately reflects the current configuration.

Support organizations are staffed, trained, and have programs which adequately support operations.

Objective

SO.1 **Management programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure support services are adequate for operations, including radiological controls, safety and health, waste management programs, maintenance, and quality assurance.**

Sub-Objective

SO.1.1 **There is adequate support from the Emergency Preparedness Organization and program.**

Criteria

1. The SDF Project has adequately defined the project emergency response requirements, organization and interfaces between the project and the site emergency response organization.

2. Procedures, facilities, equipment, and resources are in place and implemented to respond to postulated emergency events as required.

Approach

1. Review program documentation and procedures to verify the following:

   - Emergency procedures are in place.
   - Procedures provide a direct and adequate link to site emergency response procedures.
   - Procedures clearly define roles and responsibilities.

   Review appropriate site emergency preparedness documents including the Emergency Plan, Spill Prevention, and procedures to verify that SDF Project requirements have been considered and addressed for immediate and follow-

up response.

2. Review Emergency Response Team project specific training and indoctrination on the SDF Project to verify they are prepared to provide emergency response support.

Sub-Objective

SO.1.2 Maintenance programs are established, sufficient numbers of qualified personnel are provided, and facilities and equipment are available to ensure support services are adequate for operations.

Criteria

1. An adequate formal work control process provides:
   - Formal work authorization, job planning, scheduling, and backlog measures.
   - Work controlled by written procedures using qualified personnel.
   - Post-maintenance testing (PMT) to assure equipment operability.
2. Adequate staffing and resources are provided to assure quality work.
3. An effective procurement and material control process provides parts, materials, and services for work activities.

Approach

1. Conduct interviews with job planners, maintenance, and operations supervisors to determine the effectiveness of work packages, work priorities and schedules.
2. Review rework criteria and sample work plans to verify post-maintenance testing has been performed.
3. Review the repair parts inventory control programs used for determining parts and materials.
4. Review critical spare parts list.
5. Review CMMS Program implementation for the SDF.

Sub-Objective

SO.1.3 **Industrial Safety and Health programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure operational support services are adequate for operations.**

Criteria

1. Sufficient personnel, equipment, and reference materials are available to provide occupational safety and health support for the SDF Project.

2. The content of training programs adequately addresses all requirements and hazards at the SDF facility, is effectively communicated, and records are maintained.

Approach

1. Obtain a listing of the S&H programs and procedures from the SDF Project. Verify that SDF Project Management has identified the ES&H programs and procedures required for the project and has performed assessments of their performance. Determine the adequacy of these programs and procedures paying close attention to the health and safety controls.

2. Evaluate safety and health resources, such as staffing, equipment, and the availability of reference resources to determine whether knowledge and tools exist to operate and manage an effective program.

3. Review the training program for content and the effective communication of information. Interview selected employees at various levels to determine their knowledge of information regarding hazards.

Sub-Objective

SO.1.4 **Radiological Protection programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure operational support services are adequate for operations.**

Criteria

1. The SDF Project has adequately defined the project radiation protection requirements, organization and interfaces. The organization and administration of the radiological protection program ensures effective implementation and control of radiological protection activities.

2. Staffing for the SDF Project is adequate for operations.

3. The SDF Project effectively implements the following radiation protection elements:

   - Radiological posting is effectively utilized to alert personnel to the presence of radiation and radioactive materials and to aid them in minimizing exposures and preventing the spread of contamination.
   - Radiological work is planned and controlled to ensure safety and to maintain exposures ALARA.
   - PPE and other radiation protection supplies are available to support operations.

Approach

1. Verify that SDF Program Management has identified the RP programs and procedures required for the project and has performed assessments of their performance. Determine the adequacy of these programs and procedures paying close attention to the hazards identified in the health and safety controls.

2. Review current staffing levels and determine if an adequate trained RP staff is available to support operations.

3. Observe radiological work to verify the following:

   - The work is properly planned, reviewed and authorized.
   - Workers obey posted, RWP and other radiological requirements.
   - Workers follow ALARA principles.
   - Radiological Protection Technicians are available to support work.

   Walkdown work areas to verify the following:

   - Posting and barriers are installed as required.
   - Radiological monitoring instruments are calibrated and available.
   - PPE and other radiological protection supplies are available.
   - Radioactive materials are stored, packaged, and labeled properly.

Sub-Objective

SO.1.5 **Quality Assurance programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure operational support services are adequate for operations.**

Criteria

1. The quality assurance staff for SDF project are trained and qualified to perform overview activities and other listed functions.

2. Operations surveillance provides for independent verification that audits/surveillances are properly conducted and data are reviewed and analyzed in a timely manner.

3. Acceptance tests and inspections are verified to be accurate and complete for systems important to safe operation.

4. Calibration of measurement, test, and monitoring systems are assured and verified.

5. The Quality Assurance program is effectively implemented through QA review and approval of operating and maintenance procedures and work activities.

Approach

1. Obtain documentation describing how the SDF Project meets RM-0012. Verify that SDF Project Management has identified programs and procedures required for the project and has performed assessments of their performance.

2. Interview QA personnel.

3. Review the QA Plan to assure positive overview activity is planned.

4. Review operators work statements to assure tests and inspections are verified to be accurate.

5. Sample instruments and gauges to assure proper calibration has been accomplished and records of such calibration are traceable to the requirements.

6. Verify QA sign-off on operating and maintenance procedures and oversight of appropriately identified items of work.

Sub-Objective

SO.1.6 **Waste Characterization programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure operational support services are adequate for operations.**

Criteria

1. The Waste Characterization program is clearly defined and documented, has well defined interfaces and responsibilities, and includes a well defined and adequate system for documenting characterization has been established. There are adequate procedures for systematic review and audit of the Waste Characterization program.

2. Waste Programs QA surveillance provides for independent verification that operations are properly conducted and data are reviewed and analyzed in a timely manner.

3. Waste acceptance tests and inspections are verified to be accurate and complete for systems important to waste generation and turnover.

4. Calibration of measurement, test, and monitoring systems are assured and verified.

Approach

1. Review the Waste Characterization documentation for material. Verify the implementation of any specified characterization activities to determine completeness and effectiveness.

2. Interview Waste Programs QA personnel.

3. Review operating procedures to assure test and inspection requirements are included.

4. Sample instruments and gauges to assure proper calibration has been accomplished and records of such calibration are traceable to the requirements.

ATTACHMENT 2

SSR APPRAISAL FORM - FORM 1

CRA No:	REVIEW DATE:
Criteria:	
Records and Documents Reviewed:	
Personnel Contacted/Position:	
Activities Observed:	
Appraisal Results:	
Team Member: Date:	Team Leader: Date:

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ATTACHMENT 2

DEFICIENCY FORM - FORM 2

CRA No:	Deficiency No:	Deficiency Date:
Requirement: Deficiency:		
Finding Designation: Pre-Start Finding ___ Post Start Finding ___ Observation ___		
Team Member: Date:	Approved: Team Leader	Date:

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ATTACHMENT 2

FINDING RESOLUTION FORM - FORM 3

CRA No:	Deficiency No:

Finding Designation: **Pre-Start** ____ **Post Start** ____

Date Received:

Responsible Individual:

Action Plan:

Resolution:

Responsible Individual: _____ _____ _____
Print Name Signature Date

Corrective Action Completion

Certified By: _____ _____ _____
Print Name Signature Date

Verified By: _____ _____ _____
(SSR Team Leader) Print Name Signature Date
(for pre-start only)

ATTACHMENT 3

FINDING CLASSIFICATION CRITERIA

This checklist will be used by the SSR Team to evaluate if an issue must be corrected prior to startup.

A. Initial Screening

1. Does this issue involve a safety system?

2. Does this issue involve processes, functions or components identified in the Technical Safety Requirements, Process Requirements or Operational Safety Requirements?

3. Does this issue involve potential adverse environmental impact exceeding regulatory or site specific release limits?

4. Does this issue impact non-safety processes, functions or components which could adversely impact safety related processes, functions or components?

5. Is this issue non-compliant with a FERMCO or DOE-FN approved startup document?

6. Does this issue indicate a lack of adequate procedures or administrative systems?

7. Does this issue indicate operational or administrative non-compliance with procedures or policy?

8. Has this issue occurred with a frequency that indicates past corrective actions have been lacking or ineffective?

9. Does this issue require operator training not specified in existing facility training requirements?

10. Does the issue involve a previously unknown risk to worker or public safety and health or a previously unknown threat of environmental damage or release?

If the response to any of the above is yes, further evaluation, in accordance with the issue impact criteria below is required. If the response to all of the above is no, the issue may be resolved after restart.

B. Issue Impact

1. Does the loss of operability of the item prevent safe shutdown, or cause the loss of essential monitoring?

2. Does the loss of operability of the item require operator action in less than ten (10)

minutes to prevent or mitigate the consequences of events described in the Safety Analysis?

3. Does the loss of operability of the item cause operation outside the TSR/OSRs or Safety Analysis?

4. Does the loss of operability of the item result in a reduction of the margin of safety as described in the Safety Analysis?

5. Does the issue indicate a lack of control which can have a near term impact on the operability or functionality of safety related systems?

6. Does the issue involve a violation or potential violation of worker safety or environmental protection regulatory requirements which poses a significant danger to workers, the public, or of environmental release or damage?

If the response to any of the above questions is yes, the item should be considered a startup item.

ATTACHMENT 4

TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: William H. Previty

ASSIGNED REVIEW AREAS: Team Leader - Management Systems, Operations

EMPLOYER/NORMAL WORK ASSIGNMENT: Coleman Research Corporation /Remediation Support Operations.

SUMMARY OF TECHNICAL QUALIFICATIONS: Mr. Previty is a senior project manager with over 30 years management, operations, and engineering experience in the private sector and naval nuclear power programs. His experience includes management and supervision of nuclear reactor operations including supervision of quality assurance, maintenance, testing and training programs, and operational assessment programs. Nearly two years at Fernald in support of RSO conduct of operations programs and project readiness.

SUMMARY OF ASSESSMENT/INSPECTION QUALIFICATIONS: 20 years plus experience in performance based assessment of nuclear power programs. Completed FERMCO Pre-Operational Assessment Training in April 1996. At the FEMP, he served as Team Leader for the Nitric/Residual Waste Project and the Mixed Waste Stabilization Readiness Assessments. He has been a team member on pre-operational readiness review evaluation teams and conducted self assessments in support of operations readiness programs for various projects including the UNH Neutralization and the Vitrification Pilot Plant.

SUMMARY OF FACILITY FAMILIARIZATION: Mr. Previty has performed a facility walkdown, attended project familiarization briefings and status meetings, and reviewed appropriate documentation. Approved the SSR Implementation Plan.

BASIS FOR ACCEPTABLE INDEPENDENCE: Mr. Previty is not assigned to the AWWT or SDF Projects and does not have supervisory or management responsibilities for the project or associated documentation. Mr. Previty was appointed as Team Leader by the SDF Program Manager in accordance with QA-0013 as documented in FERMCO Memorandum, M:CRU5:96-0021 of February 16, 1996.

ACCEPTABLE TO TEAM LEADER: W.H. Previty 6/26/96
SIGNATURE DATE

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ATTACHMENT 4

TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Surinder Kumar

ASSIGNED REVIEW AREAS: Engineering

EMPLOYER/NORMAL WORK ASSIGNMENT: Environmental Engineering & Technology (EET) Facilities Engineering.

SUMMARY OF TECHNICAL QUALIFICATIONS: Mr. Kumar has a Masters in Civil Engineering from Utah State University, is registered in the State of Ohio as a Professional Engineer and has over 25 years diversified experience in civil engineering design, construction and construction management.

SUMMARY OF ASSESSMENT/INSPECTION QUALIFICATIONS: Mr. Kumar has managed the review process for conceptual design reports, design drawings, specifications and other technical documents as prepared by the sub-contracting architectural engineering firms. Mr. Kumar was also responsible for the internal audit of review of site wide requirements for the engineering design. Completed formal FERMCO Pre-Operational Assessment Training in April 1996.

SUMMARY OF FACILITY FAMILIARIZATION: Mr. Kumar has attended project familiarization discussions and project status meetings. He has also reviewed applicable documents.

BASIS FOR ACCEPTABLE INDEPENDENCE: Mr. Kumar is not assigned to the AWWT or SDF Projects and does not have supervisory or management responsibilities for the project or associated documentation.

ACCEPTABLE TO TEAM LEADER: (Signature on file)
SIGNATURE DATE

ATTACHMENT 4

TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Tracy A. Parmer

ASSIGNED REVIEW AREAS: Operations and Training

EMPLOYER/NORMAL WORK ASSIGNMENT: RSO Management Programs/Control Account Manager

SUMMARY OF TECHNICAL QUALIFICATIONS:

Four years experience as an Operations Supervisor and two years as a Facilities Manager - Fernald Site. Seven years in the military as an instructor in Nuclear and Chemical Defense.

SUMMARY OF ASSESSMENT/INSPECTION QUALIFICATIONS:

Performed Risk Assessments for the start-up of four RCRA Sampling Stations, and for the removal of nine Underground Storage Tanks. Reviewed the conduct and results of previous FERMCO Operational Readiness Reviews and Readiness Assessments in assigned review areas. Completed FERMCO Pre-Operational Assessment Training in April 1996.

SUMMARY OF FACILITY FAMILIARIZATION:

Mr. Parmer has performed facility walkdowns, observed SDF operational testing, attended project familiarization briefings and reviewed appropriate documentation.

BASIS FOR ACCEPTABLE INDEPENDENCE: Mr. Parmer is not assigned to the AWWT or SDF Projects and does not have supervisory or management responsibilities for the project or associated documentation.

ACCEPTABLE TO TEAM LEADER: (Signature on file)
SIGNATURE DATE

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ATTACHMENT 4

TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Marlon Richardson

ASSIGNED REVIEW AREAS: Safety and Health

EMPLOYER/NORMAL WORK ASSIGNMENT: Safety Engineer II - Facility Safety Assessment Program; Hazard Abatement Tracking System; Tracking of Fire Protection Engr. Surveys; tracking and trending various aspects of OS&H in assigned areas as well as medical and RSO.

SUMMARY OF TECHNICAL QUALIFICATIONS: Miami University (117 credit hrs.) Engineering Technology; 19.5 years Aerospace Industry including Skilled Trades; Quality and Methods engineering. Responsible for safety of processes and machines/fixtures for manufacturing. Licensed Fire Safety Inspector and Professional Firefighter. Certified Safety Officer and Fire Officer I.

SUMMARY OF ASSESSMENT/INSPECTION QUALIFICATIONS:
Responsible for POC driven Facility Safety Assessment Program. Over 700 inspections have been performed over the past year and a half. Perform inspections in the private sector for suburban Fire Department. State licensed inspector (certification on file). Completed FERMCO Pre-Operational Assessment Training in April 1996.

SUMMARY OF FACILITY FAMILIARIZATION: Mr. Richardson has extensive experience in the conduct of FSAP assessments and possesses detailed knowledge of the site and the current activities in most facilities. He has performed a SDF facility walkdown, attended project familiarization briefings, and reviewed appropriate documentation.

BASIS FOR ACCEPTABLE INDEPENDENCE: Mr. Richardson is not assigned to the AWWT or SDF Projects and does not have supervisory or management responsibilities for the project or associated documentation.

ACCEPTABLE TO TEAM LEADER: (Signature on file)
SIGNATURE DATE

ATTACHMENT 4

TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Jeffrey G. Rowe

ASSIGNED REVIEW AREAS: Waste Management

EMPLOYER/NORMAL WORK ASSIGNMENT: Mgr., NTS Disposal Program

SUMMARY OF TECHNICAL QUALIFICATIONS:

Over five years of FEMP Waste Management experience including all aspects of the waste characterization, packaging, storage, transportation, and disposal operations. Prior to working at the FEMP, held position of Operations Manager for a commercial Hazardous Waste TSDF. This operation performed fuels blending, wastewater treatment, solidification, TSCA (PCB) waste, and lab pack operations.

SUMMARY OF ASSESSMENT/INSPECTION QUALIFICATIONS:

Primary FERMCO contact for DOE-NV for application issues. Primary contact, responsibilities include performing self assessments in preparation of DOE-NV audits, escorting DOE-NV auditors during the audit, and coordinating the FEMP responses to audit findings and observations. Performed as "Technical Specialist" in support of DOE-NV during audit of the Mound Waste Shipping Program. Completed FERMCO Pre-Operational Assessment Training in April 1996.

SUMMARY OF FACILITY FAMILIARIZATION:

Basic familiarity with the technology and applications being assessed. He has performed a SDF facility walkdown, attended project familiarization briefings, and reviewed appropriate documentation.

BASIS FOR ACCEPTABLE INDEPENDENCE: Mr. Rowe is not assigned to the AWWT or SDF Projects and does not have supervisory or management responsibilities for the project or associated documentation.

ACCEPTABLE TO TEAM LEADER: (Signature on file)
SIGNATURE DATE